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CONSIDERATIONS OF PRESENT STATUS OF SEROLOGY OF SYPHILIS

THE MONTEVIDEO CONFERENCE OF THE LEAGUE OF NATIONS' HEALTH COMMITTEE

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In a previous article,[1] I summarized the results of an international competitive conference on tests for syphilis held at Copenhagen in May, 1928, under the auspices of the Health Committee of the League of Nations.[2] At that conference, the relative dependability of seven different Wassermann modifications and of seven precipitation methods was tested with approximately 1,000 serums. One of the methods stood out in specificity, sensitivity and practicability above the others. This fact, however, did not solve the problem of establishing a universal, standard method for the serum diagnosis of syphilis. Many workers undoubtedly assumed that the outstanding results of a given method even in an open competition might be due to a chance occurrence. Furthermore, soon after the Copenhagen conference, several authors announced improved modifications of their methods with claims for superiority over others, rendering the question of a most dependable test again controversial. During September, 1930, a similar competitive conference, also under the auspices of the Health Committee of the League of Nations, was held at Montevideo. This conference threw new light on the question of the dependability of tests for syphilis. As the League of Nations report of this conference has appeared,[3] an opportunity is offered to present a summary of the results.

PLAN AND PARTICIPANTS OF THE MONTEVIDEO CONFERENCE

The general plan of the Montevideo conference was to test the reliability of a number of complement-fixation and precipitation methods used in the serum diagnosis of syphilis. Seven different modifications

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1. Kahn, R. L.: The League of Nations Conference on Laboratory Tests for Syphilis, J. A. M. A. **93**:351 (Aug. 3) 1929.

2. Report of Second Laboratory Conference on Serodiagnosis of Syphilis, Geneva, League of Nations Health Organization, 1928.

3. Report of Laboratory Conference on Serodiagnosis of Syphilis Convened at Montevideo, Geneva, League of Nations Health Organization, 1931.

of the Wassermann test were tested. Six of them were sponsored by South American workers, namely, Dr. Scaltritti, Dr. Torrazza, Dr. Puppo and Dr. Moreau of Montevideo, Dr. Sordelli of Buenos Aires and Dr. de Assis of Rio de Janeiro. The seventh was sponsored by Dr. Harrison and Dr. Wyler of London. Five precipitation methods were used: the Meinicke clarification reaction, developed by Dr. Meinicke of Hagen, Germany, after the Copenhagen conference, and claimed by him to be superior to his turbidity reaction employed at that conference; the Muller clotting reaction II, developed by Professor Muller of Vienna, also following the Copenhagen conference and taking the place of the clotting reaction I employed at that conference; the Prunell serohemoflocculation reaction developed by Dr. Prunell of Montevideo; the standard Kahn reaction which had also been employed at the Copenhagen conference, and the more sensitive presumptive reaction.

The conference was held at the Prophylactic Institute of Montevideo under the chairmanship of Professor Jadassohn, the well known director of the Dermatological Clinic of the University of Breslau. Specimens of blood were obtained from patients at clinical centers of Montevideo, Buenos Aires and Rio de Janeiro under the supervision of Professor Jadassohn. The specimens from Rio de Janeiro were sent to Montevideo by air mail. The preparation of these specimens, their division into different portions and the distribution of them to the various participants was supervised by Dr. J. R. Morch of the State Serum Institute of Copenhagen. The president of the Montevideo executive committee of the conference was Dr. José Scoseria, who is chairman of the National Health Council of Uruguay. Prof. O. E. W. Olsen of the Health Committee of the League of Nations, Geneva, directed and unified the activities of the conference.

Table 1 gives a list of the participants of the conference and the methods employed by them. It is evident from the table that all tests, with the exception of the Meinicke clarification test, were carried out by their respective authors. The latter test was carried out by Dr. Dussert-Jolland of the Chilean National Bacteriological Institute, Santiago.

RESULTS OBTAINED WITH THE VARIOUS METHODS

In considering the results given by the various tests at the Montevideo conference, it seemed best to correlate these results with those obtained at the Copenhagen conference. Such conferences as these, carried out on a competitive basis, present a far more dependable picture of the value of a test than a worker is likely to present when he makes a comparative study of various tests. A worker may be more familiar with one test than with the others, which is bound to reflect on his results. Therefore, when authors of methods are invited to examine a number of "unknowns" with their respective methods in an institute

removed from their own laboratories, presenting their sealed results to a secretarial staff which correlates these results with expert clinical findings, obviously these methods are subjected to a supreme test, and the findings should be of great importance to clinicians.

It is indeed for the benefit of clinicians—and patients—that these conferences were arranged by the Health Committee of the League of Nations. Authors of methods are no less human than others, and they are likely to magnify the merits of their respective methods. The result is that clinicians will often hear diametrically opposed views as

TABLE 1.—*Participants of Montevideo Conference and Tests Employed*

Chairman—Prof. J. Jadassohn, director of Dermatological Clinic, University of Breslau; member of Health Committee, League of Nations
Secretariat—Dr. J. R. Morch, Danish State Serum Institute, Copenhagen, and Prof. O. E. W. Olsen, secretariat, Health Committee, League of Nations

South America

ARGENTINE:
Dr. A. Sordelli and Dr. J. M. Miravent, Bacteriological Institute, National Department of Health, Buenos Aires; Wassermann reaction as described by Sordelli, Miravent, Pasalagua and Favaloro

BRAZIL:
Prof. O. da Silva Araujo, Institute for Prevention of Venereal Diseases and Leprosy, and Dr. A. de Assis, Institute "Vital Brazil," Rio de Janeiro; Wassermann reaction as described by de Assis

CHILE:
Dr. E. Dussert-Jolland, Bacteriological Institute of Chile, Santiago; Meinicke clarification reaction

PARAGUAY:
Prof. M. Idayago and Dr. M. San Jurgo, Institute for Prevention of Syphilis, Asuncion

URUGUAY:
Dr. A. Scaltritti, Dr. R. Scaltritti and Dr. J. Cassiniga, Institute for the Prevention of Syphilis, Montevideo; Wassermann reaction as described by Scaltritti
Dr. J. Torrazza and Dr. J. A. Lorenzo, Clinical Laboratory, Faculty of Medicine, Montevideo; Wassermann reaction as described by Torrazza and Lorenzo
Dr. P. Puppo, Laboratory, Army Medical Service, Montevideo; Wassermann reaction, original
Dr. J. E. Moreau, Department Public Relief, Montevideo; Wassermann reaction described by Moreau
Dr. A. Prunell, Department of Public Relief, Montevideo; serohemoflocculation test described by Prunell

Other Countries

AUSTRIA:
Prof. R. Muller and Mme. S. Berczeller, Sero-Diagnostic Institute, General Hospital, Vienna; Muller conglomeration reaction II

GREAT BRITAIN:
Dr. E. J. Wyler, Ministry of Health, London; Wassermann reaction, Wyler modification

UNITED STATES OF AMERICA:
Dr. R. L. Kahn, University of Michigan, Ann Arbor; Kahn reactions, "standard" and "presumptive"

to the value of a given method, making it difficult for them to decide on the method of choice. It is undoubtedly this fact that has led many clinicians to depend on more than one method. The relative merits of the use of one method or many will be more fully discussed after a consideration of the findings at these conferences. At present, it is merely desired to emphasize that the competitive conference appears to be the most dependable approach in establishing the worth of a given test.

The types of syphilitic cases tested at the Copenhagen and Montevideo conferences included primary, secondary, tertiary, latent, con-

genital and neurosyphilis, latent syphilis representing more than twice the total of the remaining cases. It should be emphasized that in the majority of the syphilitic cases tested the patients have been under treatment. The nonsyphilitic groups at both conferences included persons with tuberculosis, diabetes, the febrile diseases, cancer, pregnancy, etc., with a comparatively smaller number of normal persons.

Table 2 presents the results given by 14 methods at the Copenhagen conference and table 3, those given by 12 methods at the Montevideo conference. The figures in these tables are taken from the official

TABLE 2.—*The Kahn Reaction Compared with the Other Methods at the Copenhagen Conference with 502 Cases of Syphilis and 435 Nonsyphilitic Controls*

Method	Number Positive* Reactions in Syphilitic Cases	Number Positive Reactions in Nonsyphilitic Controls; "False Positives"	Number Doubtful (±) Reactions in Nonsyphilitic Controls	Increase in Sensitivity of Kahn over Other Tests, per Cent
Kahn (Standard)	305	0	5	..
Wassermann, Harrison-Wyler	210	0	12	45
Wassermann, Sierakowski	195	0	13	56
Wassermann, Pavlovitch	220	6	25	38
Wassermann, de Blasi	141	14	37	116
Wassermann, Otto-Blumenthal	260	24	40	17
Wassermann, Jacobstahl	265	29	36	15
Wassermann, Debains	266	45	6	14
Sachs-Georgi (lento)	210	0	1	47
Sachs-Georgi (cito)	256	0	1	20
Murata, Nagayo-Nobechi	257	2	36	20
Vernes, Vernes-Bricq	193	2	38	58
Sigma, Norel	257	6	35	19
Meinicke turbidity	246	9	13	24
				Decrease in sensitivity of Kahn test
Muller clotting I	317	1	10	4

* Positive reactions include ++, strongly positive and +, positive, as differentiated from ± reactions which are doubtful in character.

League of Nations' reports of these conferences with the exception of the last column in table 2 and the last two columns in table 3. These columns deal with the relative sensitiveness of the Kahn reaction to the other tests, expressed on a percentage basis, the figures having been computed from those of the first column. In several instances, participants did not examine the official number of specimens—937 at Copenhagen and 927 at Montevideo—due to late arrival at the conference or to some other cause (de Blasi, Debains, Vernes at Copenhagen and Dussert-Jolland, Prunell at Montevideo). In these instances the numbers reported on by the participants were brought in line by computation with the official number examined by the rest of the participants.

The results of the different methods were uniformly expressed on a plus-sign basis. "Two plus" was strongly positive; "one plus," positive, and "plus-minus" was doubtful. The positive reactions presented in the tables embrace both one plus and two plus reactions. The plus-minus reactions, being neither positive nor negative, by common consent of the participants were not considered false positives when obtained in the absence of syphilis.

In addition to the cases summarized in tables 2 and 3, there were 6 cases at Copenhagen and 14 at Montevideo that were classed as clinically doubtful. Because syphilis could not be established or eliminated

TABLE 3.—*The Kahn Reactions, Standard and Presumptive, Compared with the Other Methods at the Montevideo Conference, with 623 Cases of Syphilis and 304 Cases of Nonsyphilitic Controls*

Method	Number Positive Reactions in Syphilitic Cases	Number Positive Reactions in Nonsyphilitic Controls; "False Positives"	Number Doubtful (±) Reactions in Nonsyphilitic Controls	Increase in Sensitivity of Presumptive Kahn over Other Tests, per Cent	Increase in Sensitivity of Standard Kahn over Other Tests, per Cent
Presumptive Kahn	471	3	9	..	..
Standard Kahn	398	0	2	18	..
Wassermann, Sordelli	347	0	2	36	15
Wassermann, Wyler	339	0	24	39	17
Wassermann, Scaltritti	311	0	4	51	28
Wassermann, Torrazza	346	8	7	36	15
Wassermann, de Assis	342	13	8	38	16
Wassermann, Puppo	283	17	8	66	41
Meinicke clarification	387	7	11	21	3
Prunell serohemoflocculation	330	14	2	44	20
					Decrease in sensitivity of standard Kahn Test
Wassermann, Moreau	402	42	14	17	1
Muller clotting II	432	2	23	9	8

with reasonable certainty from these cases, they are tabulated separately in the official reports of these conferences. At Montevideo, 27 cases of leprosy, presumably free from syphilis, are also tabulated separately in the report. The tests that proved specific at the conference, namely, the Wassermann methods of Sordelli, Wyler, Scaltritti and the standard Kahn test gave, respectively, 11, 9, 11 and 9 positive reactions in this group. It may be of interest to mention in this connection that in a comparative study between the Sordelli Wassermann and the Kahn reactions made after the conference at the National Bacteriological Institute at Buenos Aires in about 50 cases of leprosy, the Kahn gave 4 positive reactions and the Wassermann a somewhat higher number. It would appear from these findings that even specific

serologic tests will give false positive reactions in leprosy, which is in accordance with the general conception among clinicians.

THE KAHN REACTION IN RELATION TO THE OTHER METHODS

Methods That Were Free from False Positive Reactions.—Four methods did not give false positive reactions at the Copenhagen conference: the Wassermann tests performed by Wyler and Sierakowski, respectively, the double reaction (lento and cito) of Sachs-Georgi performed by Sachs and Witebsky, and the standard Kahn reaction performed by me. Of these four methods that proved specific for syphilis, the Kahn reaction was 45, 56 and 20 per cent, respectively, more sensitive. It might be added that Dr. Harold Boas of the State Serum Institute, Copenhagen, also performed Kahn tests, but because of insufficient familiarity with the technic of the test and especially because the conference limited its investigation to the reliability of methods or modifications performed by their authors, the results of Boas are omitted from table 2. At the Montevideo conference, also, there were four methods that did not give false positive results: the Wassermann tests of Sordelli, Wyler and Scaltritti, respectively, and the Kahn reaction. In this group, the Kahn was 15, 17 and 28 per cent more sensitive, respectively. Thus, at both conferences, the methods that possessed the specificity of the Kahn reaction were considerably below the sensitivity of this reaction.

The Methods That Gave False Positive Reactions.—It is generally believed that only serologic tests that are highly sensitive give occasional false positives. An analysis of tables 2 and 3, however, indicates that methods that are low in sensitivity also give false positives. Thus, at Copenhagen five Wassermann methods that gave, respectively, 6, 14, 24, 29 and 45 false positive reactions in 435 nonsyphilitic cases (table 2) were all considerably less sensitive than the Kahn reaction. Among the nonspecific Wassermann tests at Montevideo, only one method exceeded the sensitivity of the Kahn reaction, the method of Moreau. This method gave 42 false positive reactions in 304 nonsyphilitic cases and was 1 per cent more sensitive than the Kahn reaction. The remaining Wassermann tests, all less sensitive than the Kahn, gave 8, 13 and 17 positive reactions, respectively, in the 304 cases.

When considering the relation between the Kahn reaction to the precipitation reactions that gave false positives at the two conferences, one finds increased sensitivity of the former reaction in most instances. At Copenhagen, the Muller clotting reaction I was the only method that was more sensitive than the Kahn, the increase being 4 per cent. This method, however, has since been replaced by the clotting reaction II, as already indicated. With regard to the remaining precipitation

methods used at Copenhagen, the increase in sensitivity of the Kahn reaction over these ranged from 19 to 58 per cent. At the Montevideo conference, the new Meinicke clarification reaction gave 7 false positive reactions in 304 nonsyphilitic cases and was 3 per cent less sensitive than the Kahn. This method, however, was not performed by Dr. Meinicke. The Prunell reaction gave 14 false positive reactions and was 20 per cent less sensitive; the Muller reaction II gave 2 false positive reactions and was 8 per cent more sensitive than the Kahn, and the presumptive test gave 3 false positive reactions and was 18 per cent more sensitive than the Kahn.

The value of the Kahn reaction as compared with the other methods used at both conferences is summarized in the following sentence taken from the "Conclusions" of the League of Nations' report of the Montevideo conference:

> The majority of serologists taking part in the Montevideo Conference agreed that, in the hands of Professor Kahn himself, the Kahn standard test which (as was the case also at the Copenhagen Conference) proved to be absolutely specific and extremely sensitive, was the best of those demonstrated at the Conference.

THE PRESUMPTIVE REACTION

An opportunity was afforded to test the value of the presumptive reaction [4] at the Montevideo conference. My reason for the name "presumptive" is the fact that this reaction is markedly sensitive and likely to register an occasional false positive reaction. Since the number of studies on this method as compared with others is quite meager, it was of interest to find how it would compare with the other tests and with clinical findings at the Montevideo conference. As seen from table 3, the presumptive test is 18 per cent more sensitive than the standard Kahn test and from 9 to 66 per cent more sensitive than the other methods. The presumptive test gave 3 false positive reactions, while the average of the false positive reactions given by the 7 other nonspecific tests is 15. It is thus evident that the presumptive test, although unusually sensitive, possesses a comparatively high degree of specificity.

RESULTS WITH SPINAL FLUID

Soon after the Copenhagen conference, I was asked by Dr. Madsen, the chairman of the Health Committee of the League of Nations, whether I would consider making Kahn tests on a large number of spinal fluids for comparison with the Harrison-Wyler Wassermann method at the St. Thomas Hospital, London. Only 122 specimens of spinal fluid were tested at the Copenhagen conference, and it was

4. Kahn, R. L.: The Kahn Test, Baltimore, Williams & Wilkins Company, 1928.

obviously impossible to draw a definite conclusion from so small a number. Accordingly, I examined 555 specimens of spinal fluid with the Kahn reaction in London for comparison with the Harrison-Wyler Wassermann test performed by Dr. Wyler. Of this number, 317 were clear, noncontaminated fluids and 238 were cloudy, contaminated fluids. However, the results with the two tests were similar, if one eliminates the plus-minus reactions. Neither method gave false positive reactions.

At Montevideo, approximately 200 specimens of spinal fluid were tested. Unfortunately, the ammonium sulphate I had available for the performance of the Kahn test was not of the highest purity, in my opinion, and I made official note to this effect. However, I performed the standard and presumptive tests on these fluids. The standard Kahn test gave no false positive reactions in 147 cases free from neurosyphilis. The only other method similarly specific was the Harrison-Wyler Wassermann test. In the remaining group of 53 specimens of spinal fluid from cases of treated and untreated neurosyphilis, the Kahn gave positive results in 33 and the Wassermann in 28. The presumptive Kahn test gave 35 positive reactions in this group and 4 positive reactions in the nonsyphilitic group, 3 of which were negative on repetition. I believe that this number of false positive reactions as well as the comparatively small increase in sensitivity of the presumptive over the other tests was due to the fact that the ammonium sulphate, already referred to, affected the presumptive test to a greater extent than the standard test. The Wassermann method of Scaltritti gave exceptionally good results with spinal fluids. This method gave 39 positive reactions in the neurosyphilitic group with only 1 positive in the nonsyphilitic group.

In summarizing the results with spinal fluids, the official report states:

> Only two of the diagnostic methods compared showed absolute specificity; Kahn's "standard" test and Dr. Wyler's. Kahn's test was the more sensitive of the two as was also demonstrated by a comparison between the two methods applied to the much more ample material of 317 specimens (exclusively composed of samples of clear and fresh cerebro-spinal fluid) which was made in London in 1928 at the instance of the Health Organisation of the League of Nations.

THE PROBLEM OF PLUS-MINUS REACTIONS

Serologic borderline or plus-minus reactions in cases of syphilis are most frequently obtained in early primary and in any stage of syphilis after intensive therapy. The biologic nature of these reactions is not known, since we are still in the dark regarding the biologic nature of positive reactions. These reactions may be due to physiochemical changes in the serum or to the presence of reagin resulting from spirochetal activity, or possibly to some other causes. The same conditions

that cause positive reactions, therefore, will cause weak and borderline reactions in syphilis when the "serologic precursor" is reduced.

In rare instances, borderline reactions are bound to occur, also, in nonsyphilitic cases. If syphilitic and nonsyphilitic serums, respectively, are mixed with antigen and examined by means of the ultramicroscope, one will find marked aggregation of the colloidal antigenic particles in the case of the syphilitic serums and slight aggregation with the nonsyphilitic serums.[5] Since the difference between syphilitic and nonsyphilitic serums is thus quantitative rather than qualitative, it is to be expected that those nonsyphilitic serums having somewhat more than slight aggregation power, will give borderline or plus-minus reactions.

From a practical standpoint, a serologic test should give as few plus-minus reactions in nonsyphilitic cases as possible. At the Copenhagen conference, the Sachs-Georgi test stood high in this regard, having given only 1 false plus-minus reaction. The Kahn reaction gave 5 such reactions at Copenhagen and 2 at Montevideo, 7 in a total of 739 nonsyphilitic cases. The Harrison-Wyler Wassermann test, free from false positive reactions at both conferences, gave 12 plus-minus reactions at Copenhagen and 24 at Montevideo, 36 in the 739 nonsyphilitic cases. Muller, with splendid precipitation tests at both conferences, gave 10 such reactions at Copenhagen and 23 at Montevideo in the same group of nonsyphilitic cases. It is evident from tables 2 and 3 that no method, even among the specific group, was entirely free from plus-minus reactions in the nonsyphilitic cases. The old accepted view among clinicians that such reactions should be accepted as indicators for further study is therefore amply justified by the results of these conferences.

SIGNIFICANCE OF NEGATIVE REACTIONS

In discussion of serologic tests, emphasis is properly given to positive reactions, but not sufficiently so to negative reactions. At the Copenhagen conference, the most sensitive method detected only 63.5 per cent of the cases studied. At the Montevideo conference in which the presumptive test was the most sensitive, only 75 per cent of the syphilitic cases were detected by this method. Table 4, taken from the Montevideo report, gives the results obtained by the various methods on a percentage basis. It is evident from this table that the methods gave from 25 to 50 per cent negative reactions in syphilitic cases. It is true that a large number of these patients had been treated. Nevertheless, it is well to keep in mind that the most sensitive of methods available does not detect all cases of syphilis.

5. Malloy, A. M., and Kahn, R. L.: The Ultramicroscopic Precipitation Reaction in Syphilis, J. Infect. Dis. **48**:243, 1931.

USE OF TWO SEROLOGIC TESTS

The Copenhagen conference recommended that: "In order to secure the most reliable information to the clinician, at least two different sero-diagnostic methods be employed." To this recommendation was appended a footnote signed by a group of the participants to the effect that they "would for the present prefer that one of the methods should be a Wassermann test." In the official report of the Montevideo conference is also found the suggestion "that two different diagnostic methods should be employed simultaneously." However, these recom-

TABLE 4.—*Results Obtained by the Various Methods at the Montevideo Conference, Expressed on a Percentage Basis* *

Method	Positive Reactions, per Cent	
	Syphilis	Nonsyphilitic Controls
		One per cent or less of nonspecific reactions
Kahn's "presumptive" test	75.6	1.0
Muller's clotting test (M. B. R. II)	69.3	0.7
Kahn's "standard" test	63.9	0
Modified Bordet-Wassermann test performed by Sordelli and Miravent	55.9	0
Modified Bordet-Wassermann test performed by Wyler	54.4	0
Modified Bordet-Wassermann test performed by Scaltritti and Cassiniga	49.9	0
		More than one per cent of nonspecific reactions
Modified Bordet-Wassermann test performed by Moreau	64.7	13.9
Meinicke's clarification test (M.K.R.) performed by Dussert-Jolland	62.2	2.4
Modified Bordet-Wassermann test performed by Torrazza and Lorenzo	55.5	2.6
Modified Bordet-Wassermann test performed by de Assis	54.9	4.3
Serohemoflocculation test performed by Prunell	52.4	4.5
Modified Bordet-Wassermann test performed by Puppo	45.4	5.6

* Taken from the official report of the Montevideo conference.

mendations must be interpreted with care if the standard of accuracy of the serum diagnosis of syphilis is to be raised. Two tests are better than 1 only when they both possess a high degree of specificity and sensitivity, otherwise the results will lead to confusion. This becomes evident when one considers that 10 of the 14 methods at Copenhagen and 8 of the 12 methods at Montevideo gave false positive reactions.

Several years ago, the use of the presumptive test was suggested as a check on the standard Kahn reaction, and the results at Montevideo throw light on this suggestion. The presumptive test was considerably more sensitive than all the other methods, yet it gave only 3 false positive reactions in the 304 nonsyphilitic cases, while, as already indicated, the average number of false positive reactions given by the

remaining 7 methods in the nonspecific group was close to 15. It is of interest also that the number of false positive reactions given by the Wassermann tests at Copenhagen and at Montevideo far exceeds the number given by the precipitation tests. As seen from tables 2 and 3, in the 739 nonsyphilitic cases investigated at both conferences, the 14 Wassermann tests gave a total of 198 false positive reactions, while the 12 precipitation tests gave a total of 46 false positive reactions. If to this is added the fact that the sensitivity of the precipitation tests was considerably higher than the sensitivity of the Wassermann tests at both conferences, it would seem that the hope for ultimate perfection of the serum diagnosis of syphilis lies in the realm of precipitation and not in complement fixation.

AN AMERICAN SEROLOGIC CONFERENCE?

I should like to take this opportunity to urge the American, Canadian and Mexican Medical Associations and allied organizations interested in syphilis and in its control to arrange in due time a North American competitive serologic conference similar to those held at Copenhagen and at Montevideo. Serologically, the conditions in the United States are similar to those elsewhere. The author of method or of modification A claims it to be superior to methods B, C and D, and a greater or smaller number of laboratory workers and clinicians report favorable results with A. The author of method or modification B claims it superior to A, C and D, and another group of workers is in agreement with him. The result is that a worker interested in the serology of syphilis will obtain divergent views depending on whether he seeks his information in certain laboratories in New York, Pennsylvania or in Michigan. A competitive conference among American serologists would obviously clarify this situation.

The Health Committee of the League of Nations is to be congratulated on initiating and making possible such conferences. Thanks are also due to the Republic of Uruguay for arranging the Montevideo conference. These conferences threw more light on the serology of syphilis than innumerable articles by individual authors. Not only is there need for a serologic conference in America, but for repeated conferences at least every five years. Such conferences would eliminate unreliable methods and at the same time serve as a stimulus to serologists to further perfect existing methods, and in the end would more than compensate for the expense involved. The Health Committee of the League of Nations should prove ideal for the management of such conferences. This committee has the technic perfected, thus assuring efficiency.

HISTOGENESIS OF MULTIPLE IDIOPATHIC HEMORRHAGIC SARCOMA OF KAPOSI

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The older dermatologists classified diseases of the skin by their morphologic characteristics. This attitude is associated closely with such names as Hebra, Kaposi, Fox, Fordyce, Crocker and others. In modern dermatology, as in other special medical sciences today, effort must be made to establish, whenever possible, the etiology and pathogenesis of disease by histopathologic, bacteriologic and physicochemical methods. The group of diseases originally described by Kaposi under the name of sarcoid tumors is a striking example of diseases that previously were classified according to their morphologic characteristics, but more recently have been recognized as definite entities. Kaposi had in mind in his original description mycosis fungoides, lymphodermia perniciosa, sarcomatosis A, B and C and possibly leukemia cutis and pseudoleukemia cutis.

Of the diseases classified by Kaposi [1] as sarcomatosis A, B and C, it is known that type A, melanotic sarcoma, is true blastoma. Type B, which Kaposi called multiple idiopathic pigment sarcoma, forms the basis of the present investigation, and an attempt will be made to clarify its position and relationship to the group of diseases characterized by disturbance in the reticulo-endothelial system. The purpose of this report is to record my observations on a group of sixteen cases of sarcoma of Kaposi, in some of which it was possible to study the histopathologic development from the early phases to the end-stages. At the University of Königsberg there are unusual opportunities for studying such cases because of the proximity of the University to the Russia-Poland border, where the disease is frequently encountered. I have also had the opportunity of studying additional examples of the sarcoma of Kaposi and of sarcomatosis C while at the Mayo Clinic. Through Dr. H. E. Michelson of the University of Minnesota, I have

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Abstract of a monograph to be published in German. This study was started in the clinic of Prof. Dr. W. Scholtz, at the University of Königsberg, Germany, and was completed while a special student in the Mayo Foundation for Medical Education and Research.

1. Kaposi, Moriz: Pathology and Treatment of Diseases of the Skin, New York, William Wood & Company, 1895, p. 599.

had the opportunity to study four more cases, and Dr. M. J. Reuter of Milwaukee allowed me to report one of his cases. The study of these additional cases confirmed my earlier opinions and also yielded further information concerning the essential features of the process.

CLINICAL STUDIES

All sixteen cases were typical clinical examples of the sarcoma of Kaposi, and as a group presented similar clinical and pathologic features with but slight individual variations. The clinical histories of these cases are given briefly in the accompanying table, but the detailed descriptions may be found in a more extensive publication.[a] As I shall refer to the individual variations presented by these cases in the conclusions of this paper, I shall defer consideration of them until that time (figs. 1 and 2 and table).

HISTOPATHOLOGIC STUDIES

An analysis of the histologic features found in these cases during all stages of their development presented the following characteristics: The tissue was fixed in alcohol and formaldehyde, and sections were studied, although in a few cases frozen sections were used for fat stains. Preparations were made by the following methods and stains: hematoxylin and eosin, van Gieson's, Unna's acid orcein for elastin, elastin H (Grübler), iron, silver nitrate, Unna-Pappenheim's, Orlandi's, Bielschowsky's, Mallory-Haidenhain's (Kernohan's modification), the oxydase reaction and collagen (Unna).

The earliest lesion examined histopathologically was a small macula with only slight changes in color (fig. 3*a*). The epidermis was practically normal, although slight hyperkeratosis could be found in some cases. The individual epithelial layers were well demarcated, and little melanin was present in the basal cell layer. In the cutis varying grades of edema were noted, ranging from slight to marked, associated with a scattered infiltrate in the papillary and subpapillary layers. In some cases, this infiltrate was present only in the papillary layer, or only in the deep part of the cutis. The first impression is that the cells making up the infiltrate are round cells, but on closer inspection it is seen that they may be rounded or with processes (fig. 5*a*). These cells are distributed along the vessels and make their first appearance around the capillaries of the hair follicles, sebaceous glands, arrectores pilorum muscles, sweat glands and ducts. The individual cells may be round, oval or polygonal. They are polygonal where the infiltrate is most dense and the cells are pressed together. They assume spindle shapes toward the periphery of the nodule. These cells lie embedded in a syncytial supporting tissue that seems to merge with the capillary endothelial cells. The nuclei of these endothelial cells are stained

lightly and are frequently swollen, as is the individual cell. With the van Gieson stain, fine pink-staining fibrils are demonstrated throughout the infiltrate.

The proliferating vessel wall cells[2] surround the vessels like a cuff and mark off sharply the vascular network from the remainder of the connective tissue. These vessel wall cells may scarcely be differentiated from the other cells in the infiltrate, as their form gradually undergoes transition from round to oval to spindle cells at the periphery. In

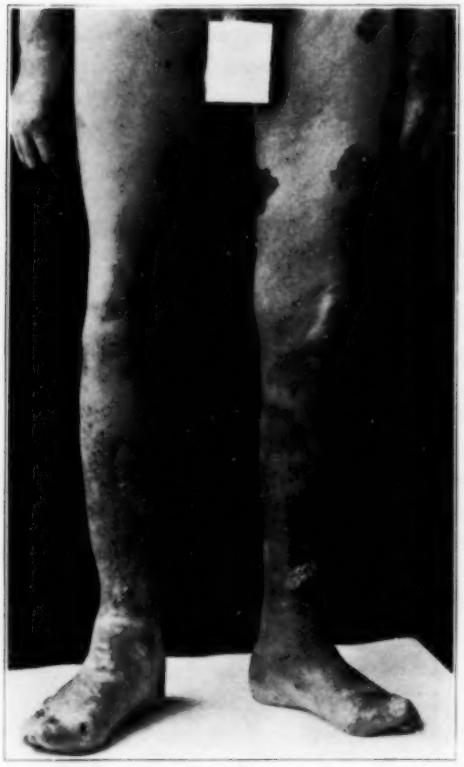

Figure 1

Figure 2

Fig. 1.—Typical lesions and distribution of Kaposi's sarcoma, illustrating how the most advanced lesions appear on the hands and feet.

Fig. 2.—Marked varicose veins of man, aged 22. Typical Kaposi nodules in various stages of development, distributed along the vessels and connected with them.

2. I purposely use the term "vessel wall elements" rather than endothelial or adventitial cells (perithelial cells, pericytes, reticulum cells and so forth) because at present the exact relationship between these cells has been the source of much contention by various authors, including Marchand (quoted by Herzog, Georg: Ueber die Bedeutung der Gefässwand-Zellen in der Pathologie, Klin. Wchnschr. **2**:684 [April 9] 1923).

*Summary of Cases on Which Paper Is Based**

Case	Date of Admission	Age, Years	Sex	Race or Nationality	Occupation	History and Clinical Examination	Comment
1	1932	22	M	Russian Jew	Laborer	Onset on left foot two years previous to admission; rapid development in typical distribution of disease, especially along vessels (fig. 2)	11.5 per cent monocytes; hemorrhage into the skin
2	1925	65	M	American	Bookkeeper	Five years' history; first on ankles with swelling and hemorrhages around ankles; later, typical distribution and purpura-like eruption	5 per cent monocytes; 5 per cent transitional cells; unusual vesicles, bullae and pustules
3	1927	23	M	American	Mechanic	Began after trauma at age of 6 years; gradual development of lesions from right knee to ankle; no other part of body involved	3 per cent monocytes; 3.5 per cent transitional cells; definite improvement after radium therapy
4	1929	35	M	Greek	Laborer	Five years' history; first on toes and heels; later, typical distribution of nodules and cutaneous hemorrhages; abdominal pain and severe weakness for six weeks	Little change after roentgen therapy and solution of potassium arsenite
5	1931	54	M	Russian Jew	Farmer	Eighteen months' history; unusual onset in groins and upper part of thighs; later, typical distribution of nodules, plaques and verrucous lesions; severe pain in feet	Marked improvement in pain after roentgen therapy and neoarsphenamine
6	1925	66	M	Polish Jew	Tailor	First nodule on left leg forty-six years previously; diagnosed sarcoma histologically and leg amputated; later typical nodules on right foot and leg	Definite improvement after roentgen therapy, neoarsphenamine and arsenic intramuscularly
7	1926	64	M	Polish	Laborer	Four years' history; first on hands and feet preceded by itching and swelling; later typical distribution including mucous membranes	Temporary improvement after roentgen therapy, but new nodules appeared later
8	1929	64	M	German of Polish descent	Shoemaker	Unusual onset on eyelids ten years previously with hemorrhages and nodules; lesions next on scalp and face followed by typical distribution over body	No improvement after roentgen therapy and arsenic
9	1928	55	F	German of Polish descent	Housewife	Typical lesions but limited to sole of right foot.....	Comparatively benign manifestations, probably because occurring in a woman; lesions limited to one foot
10	1928	45	F	German	Housewife	Typical lesions, but limited to hands; duration one year.....	Disease limited to hands
11	1924	44	M	American	Laborer	Six months' history; lesions first on feet and legs; later hands, buttocks and scrotum	2.5 per cent monocytes; 2.5 per cent transitional cells; no improvement with neoarsphenamine
12	1931	83	M	American	.....	Lesions first on left foot and leg thirty years previously; later on left arm and hand where lesion was ulcerating and fungating	General condition good despite age and long duration of disease
13	1930	67	M	American of Swedish descent	Painter	First lesion four years previously; began as purpuric spots; later nodules in typical distribution	Patient died of pneumonia; had mild secondary anemia; at necropsy definite Kaposi sarcoma in skin, lungs, liver and intestinal tract
14	1929	59	M	Russian Jew	Merchant	Unusual onset on nose six years previously; later, on fingers and toes	Patient was exceptionally healthy at all times
15	?	60	M	Scandinavian	Pharmacist	Onset by typical nodules between toes; later, fingers and face.....	No improvement with arsenic and roentgen therapy
16	Clinical history not available.....					Microscopic preparations studied	

* In none of the cases was the patient's past or familial history of any significance. Seven patients were of good constitution and in otherwise good health both subjectively and objectively. Seven patients were in poor general health, with weakness and some loss of weight. One of the latter had an enlarged liver, but had mitral insufficiency and cardiac failure. Another patient had an enlarged liver and spleen. With these exceptions, there were no significant findings in the general examination

some cases the infiltrate is found only around the vessels in the subpapillary layer, whereas in others it is only around the vessels in the deep network below the cutis. In some cases, both networks may be involved. As the infiltrate becomes greater, it is seen that the extension is not only peripheral, but also along the branches of the vessels, gradually involving more and more of the vascular system as the disease progresses.

In a fully developed infiltrate the cells may be divided into two distinct classes. In the first class are the cells that retain their endothelial form but which no longer line blood vessels. However, they may be recognized by their large, pale-staining nuclei with their fine chromatin network and one or two nucleoli. To this class also belong

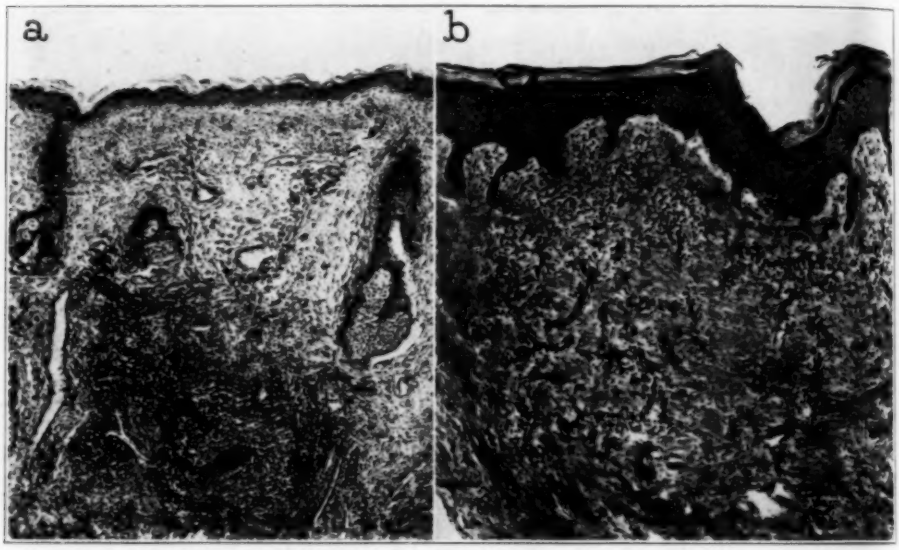

Fig. 3.—In *a* is shown the first stage, early nodular infiltrate in the cutis; in *b*, the second stage, a large number of newly formed capillaries and proliferating vessel wall elements.

cells of similar form derived not from the blood vessels but from the reticulum, which have been called histiocytes by Aschoff, clasmatocytes by Ranvier and fixed wandering cells by Maximow.[3] These cells, because of their origin from two sources, either may be found migrating from the vessel walls and surrounding the vessels, still in definite relationship to them, or may be found entirely apart from vessels when they arise from the reticulum.

3. Maximow, Alexander: Ueber undifferenzierte Blutzellen und mesenchymale Keimlager im erwachsenen Organismus, Klin. Wchnschr. **5**:2193 (Nov. 19) 1926.

The second class of cells in the infiltrate consists of the large or small, round, oval or spindle-shaped cells that have in common large, dark-staining nuclei and a small cytoplasmic border. These cells are called lymphocytoid cells by Marchand and include cells of many different types. The following types of cells are classified under the term lymphocytoid cells: (1) lymphoblasts and lymphocytes, round cells, both large and small; (2) large and small plasma cells, some containing two nuclei; (3) mast cells, and (4) peculiar large cells with acidophilic cytoplasm and enlarged, indented nuclei. Some of these are already typical monocytes, but most of them are transitional cells that cannot be exactly classified. At the periphery of the nodular

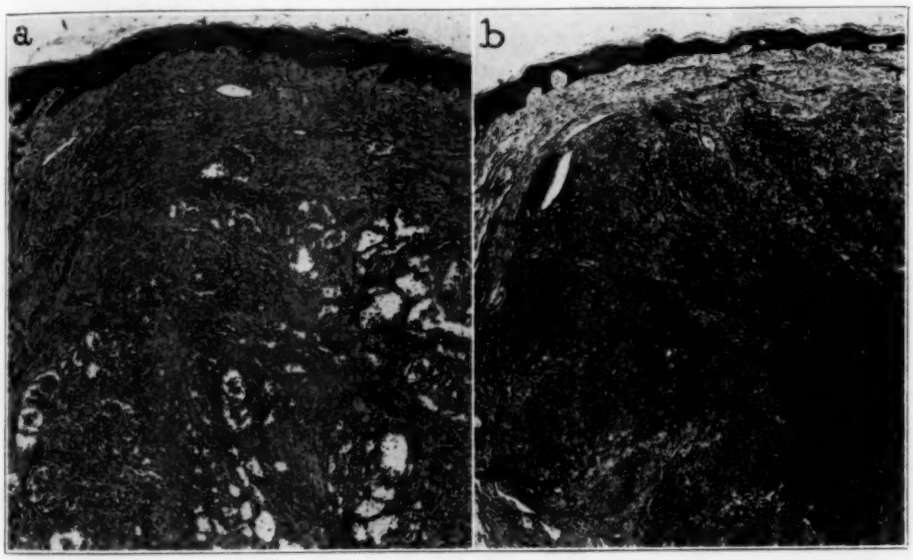

Fig. 4.—In *a* is shown the third or angiomatous stage; cavernous blood spaces are seen; in *b*, the fourth stage, angiosarcomatous picture. There are spindle cells in whorls and small blood spaces scattered throughout the nodule.

infiltrate, in the zone between the infiltrate and the cutis, are found in addition early fibroblasts and cells that resemble epithelioid cells.

In some cases, scattered throughout the infiltrate, clumps of endothelial cells may be found either in relationship to blood vessels or entirely away from them. These probably are the earliest attempts at formation of new blood vessels, the vessels being still incomplete. With the Maresch-Bielschowsky stain, gitterfasern (a third type of the supportive network system, described in this country by Way as lattice fibers [4]) are demonstrated throughout the infiltrate in spider-

4. Way, S. C.: Lattice Fibers, Arch. Dermat. & Syph. **16**:25 (July) 1927.

like fashion. They are most dense where these new blood vessels are being formed. Peculiar, sinus-like spaces lined by endothelial cells are also found in some of the areas. These are not unlike the spaces and cells found in the spleen. The lining endothelial cells of these spaces contain fine granules of iron pigment.

In the early stages of involvement, the dermal appendages are not altered, although they are surrounded by the cellular infiltrate.

In the cutis are found surprisingly large amounts of iron pigment, which for the most part is intracellular within vessel wall cells and

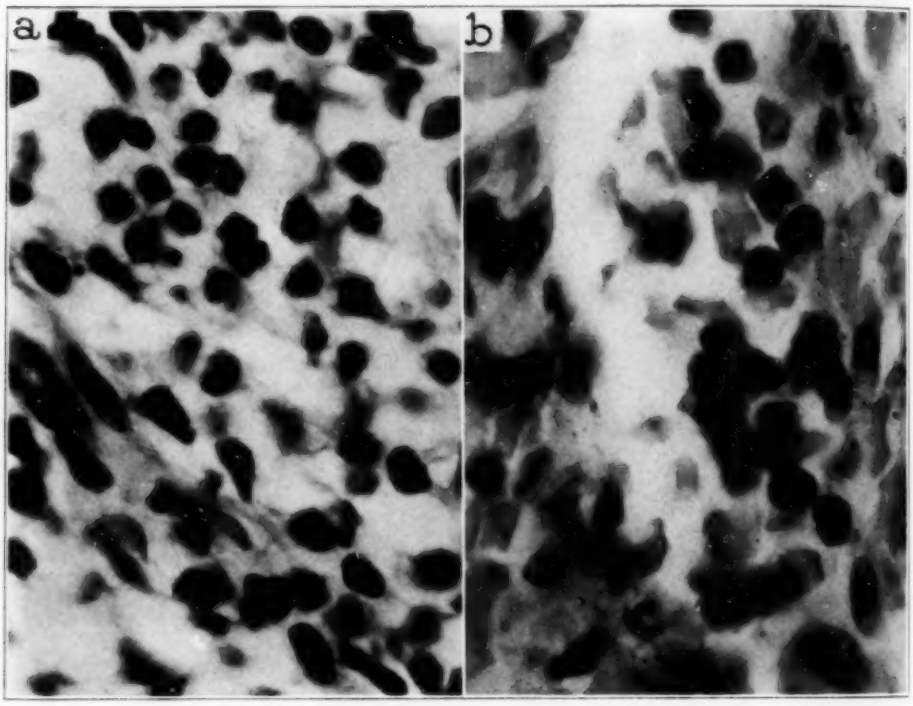

Fig. 5.—In *a* is shown an early stage; there is a fine reticulum between the cells of the infiltrate, which are lymphocytoid. There is a proliferating vessel in the lower corner; in *b* are seen monocyte-like cells in the vessels and in the tissues.

cells of the infiltrate. Some of the pigment, however, is extracellular. Some of the cells containing pigment were so densely packed with the pigment that they ruptured, scattering it diffusely about the disrupted cells. The iron (hemosiderin) reaction was strongly positive throughout the cutis. The presence of iron is surprising, since there is proliferation of the vessel wall cells but little dilatation of the vessels themselves, the characteristic angiomatous picture of later stages not yet being present. However, the possible source of the iron pigment may

be suspected even in these preangiomatous stages, for in a few cases erythrocytes are found scattered diffusely throughout the cutis, and in some areas blood vessels seem literally choked with red blood cells, but with no evidence of proliferation in their wall elements. Where the red blood cells were not contained within vessel walls, they sometimes lay near small and large blood vessels, but serial sections did not reveal any rupture of the vessel wall. Elastic tissue stains disclose that the elastic tissue in these very early lesions is either fragmented and clumped or entirely destroyed throughout the whole cutis, to an even greater extent than in the older lesions, where elastic fibers may be found in the cutis, except in the vicinity of the tumor, where they are

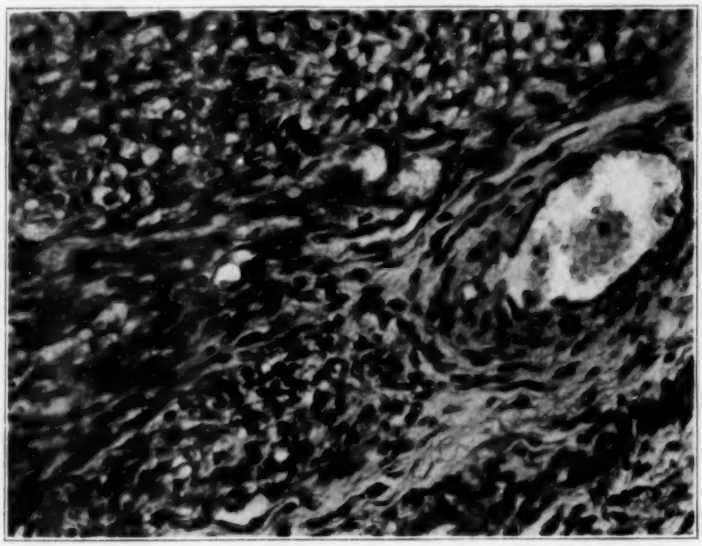

Fig. 6.—Angiosarcomatous stage, illustrating monocytes, proliferation of vessels and syncytium.

completely destroyed. Van Gieson preparations reveal that the collagen fibers may also be involved in some cases, but to only a slight degree as shown by minor tinctorial changes and slight homogeneization of the fibers. Fat stains in this and all other stages revealed no pathologic increase in fat. Similarly, nerve stains showed no pathologic proliferation of the nerve elements in any of the stages.

An early bright red papule was also studied as representing a lesion slightly older (fig. 3*b*). The epidermis in this stage is also normal. The pathologic change is again revealed in the cutis, which shows somewhat similar features to those found in the earliest lesion. However, the vessel wall elements are now much more pronounced, whereas the lymphocytoid elements have begun to recede. The vascular net-

work presents a striking picture, with many vessels arising from the superficial or deep vessel systems and spreading fanlike toward the epidermis, many of them being cut both transversely and longitudinally. They are easily recognized because of their proliferating vessel wall elements. This proliferation involves for the most part small capillaries. To a lesser extent, the larger vessels are also involved, around which are sometimes as many as ten or twelve rows of cells. The cells undergo a transition again, from round to oval to spindle-shaped, at

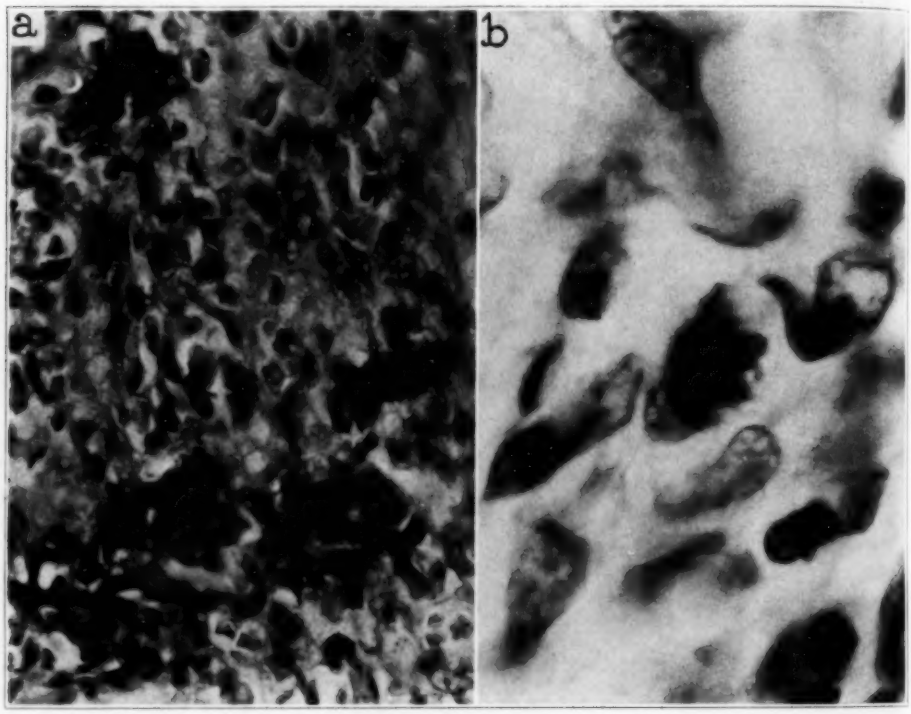

Fig. 7.—In *a* are shown unusual giant cells; the lower one apparently arises from the vessel wall; in *b*, a mitotic figure in the sarcomatous stage.

the periphery, where they gradually take on more and more the form of fibroblasts. The infiltrating cells are arranged in bundles and whorls, and these, under higher magnification and in serial sections, are seen always to follow and surround the course of the vessel, which is usually centrally placed. The infiltrate disturbs the surrounding tissue only in a mechanical fashion in order to create space for itself.

The tumor enlarges by extension of the cells along the vessels and also by peripheral extension around the vessels. The infiltrate around the vessels gradually becomes larger and larger, ultimately to become

confluent with an adjacent perivascular mantle, and forms thus a still larger infiltrating mass. With serial sections, it was found that some parts of the vessels may be entirely normal, whereas in other parts of the same vessels may be seen the pathologic changes described. Similarly, the marked increase in vascularity throughout the cutis is strikingly demonstrated by the serial sections, even more so than when seen in only one plane. Even in such an early lesion, suggestion of the angiomatous picture typical of later stages is already found, although many of the capillaries are not yet completely formed and remain as bizarre, immature attempts at formation of new vessels. This may further explain the occurrence of hemorrhage at a later period, the erythrocytes escaping into the tissues through the incompletely closed vessel walls. This was demonstrated in some cases by the presence of hemorrhage deep in the cutis, near a larger vessel, which had branching from it these more or less solid, immature capillaries.

Hemosiderin was distributed both intracellularly and extracellularly as described in the earliest lesion. The elastic tissue was completely destroyed where the infiltrate was present, and to a lesser extent in the adjacent tissue. Gitterfasern were demonstrated where the new blood vessels were being formed, and also in the hemorrhagic areas where the endothelial cells were proliferating in an attempt to organize the hemorrhage. This is particularly well exemplified in the case of a large hemorrhage shown in figure 8*a*.

A moderately firm papule (fig. 4*a*), from 0.5 to 3 cm. in diameter and dark bluish red, was selected as representative of the third stage in the developmental process. In this stage, for the first time a tumor can be discerned by examination of the section with a hand lens. It stains a brownish red in the hematoxylin and eosin preparation, in rather sharp distinction to the bluish pink of the normal tissue.

In the epidermis, slight hyperkeratosis and flattening of the rete ridges over the tumor, gradually becoming normal when not above a tumor, were noted. These changes in the epidermis are simply secondary to atrophy caused by pressure from the tumor below. In some cases, melanin pigmentation in the basal layer was slightly increased in the epidermis above the borders of the tumor, but not immediately above the tumor. The tumor lies in the cutis, rather close beneath the epidermis, and extends down to the subcutis. For the most part the tumor is made up of cavernous blood spaces filled with erythrocytes. In a few cases, definite dilatation of lymph vessels was also found. The endothelial lining of the cavernous spaces does not show the proliferation that is found in the capillaries. The large spaces have only one row of endothelial cells, whereas in the smaller vessels, in this as in the earlier stages, there is endothelial proliferation of their walls.

Between the vessel spaces is a richly cellular fibrous stroma, which also completely encapsulates the tumor and sharply differentiates it from the normal connective tissue of the cutis.

The relationship of the vessel wall cells of the smaller vessels to the development of angiomatous and fibrous elements is still seen; this was described as a striking feature of the earlier stage.

The endothelial cells lining the large cavernous spaces give no clue to this relationship, and these cavernous spaces must perhaps be con-

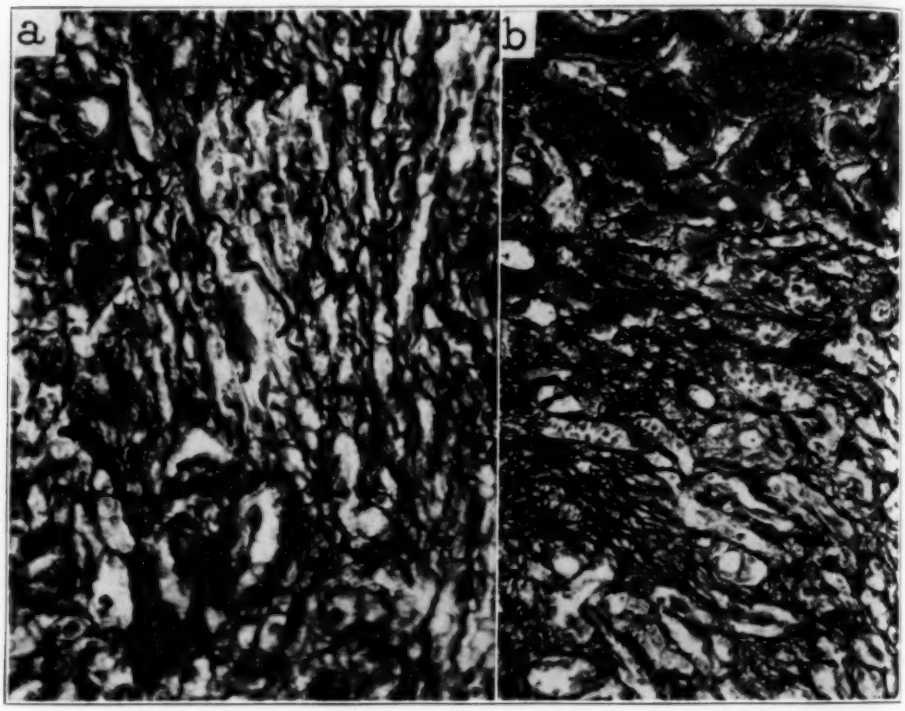

Fig. 8.—In *a* are seen gitterfasern in a large hemorrhage; spider-like arrangement of fibers about the vessels may be noted. In *b* are gitterfasern in normal hepatic tissue and markedly increased in a nodule of sarcoma of Kaposi.

sidered more an end-stage of their development in the angiomatous direction. The end-stage of the sarcomatous development has not yet been reached.

The cellular stroma is made up chiefly of spindle-shaped cells, with here and there small collections of round or oval cells of the lymphocytoid series. Occasionally within or around the vessels are found large monocyte-like cells with indented or irregularly shaped nuclei and an acidophilic cytoplasm. A few plasma and mast cells may be found scattered diffusely through the infiltrate.

The elastic tissue is completely destroyed in the tumors, but begins to show much less disturbance in the surrounding tissue than was found in corresponding areas in the earlier lesions.

Iron pigment is present in large amounts toward the periphery of the nodule, but in only surprisingly small quantities in the nodule itself.

Near this large angiomatous tumor in several places are found younger lesions representing the earlier stages of the disease as previously described. It is characteristic of the disease that all stages of its development may be demonstrated in the older lesions.

A firm, brown to livid nodule (fig. 4*b*) was selected to represent the fourth stage in the developmental process.

The development of the vessel wall elements and histiocytes or clasmatocytes not only may proceed in an angiomatous direction, but may also give the picture commonly found in sarcomas. The angiomatous features are still present at this stage, but the development of spindle-shaped cells overshadows the angiomatous characteristics, so that a picture resembling angiosarcoma is produced. Erythrocytes may always be found closely packed between the spindle cells, but not always within endothelial-lined spaces, since the whole assumes more of syncytial arrangement. The cells making up the tumor are of many different forms: round, small and large oval and spindle cells and giant cells, which are merely aggregates of several cells and do not belong to any known type of giant cell. In one case in which giant cells were present, one of them was found attached to and projecting from the vessel wall from which it was arising, and probably was discovered in the process of extrusion (fig. 7*a*). The spindle cells frequently appear in whorl formation, and vessels are usually found in these whorls cut in many different planes so that their lumina are in many different forms. The structure of the tumor, in places where many vessels have been cut, strongly reminds one of a honeycomb.

The presence of numerous mitotic figures further emphasizes the malignancy of the process at this stage of its development, and in a few cases the picture was so malignant that a diagnosis of sarcoma could be made.

In the latter stages, as the tumors become larger, some of the dermal appendages show atrophic changes or may be completely destroyed.

The fifth phase of the process was studied in an involuting plaque. The centers of these plaques were deeply pigmented, almost black in some cases, and atrophy, depression and scarring were seen. At the periphery the color was still bright, and there were individual nodules, some with a tendency to coalesce.

Signs of involution may be suggested, even in early papules, but in later stages these are quite pronounced. Such signs are: poorly

staining cells; vacuolization of nuclei, cytoplasm or both, and some fragmentation and disintegration of the nuclei. Rarely, small areas of myxomatous degeneration could be found. Kaposi [5] suggested that fibrin appeared in the large vessels and resulted in the clotting of the erythrocytes, thus causing involution of the older tumors. From my studies, I was unable to corroborate this. Small amounts of fibrin were present in some vessels in early as well as in late tumors, even when signs of involution were absent, but in such minimal amounts that it was scarcely conceivable that this could result in involution of the tumors. In conjunction with these degenerative manifestations, fibrous transformation of parts of the tumor, with the appearance of chronic granulation tissue, was found. Perhaps this granulation tissue is evidence of the final function of the vessel wall cells that have been able to retain their normal capacity to form regeneration tissue in the body.

An involuting papule two months after roentgen therapy was the lesion selected for study of the sixth phase in the developmental process. I had the opportunity of excising several lesions two months after treatment with roentgen rays. At this time the papules were involuting and I hoped they would ultimately disappear. However, five months later there was a reappearance of the lesions, which will now be described.

The epidermis was thin and atrophic. The cutis revealed few cells and destruction of the elastic tissue. A few vessels remained, some of which were dilated, but the walls of most of them were the sites of hyalin-like thickening. There were extraordinarily large amounts of iron pigment, in clumps and in rows, some intracellular, but chiefly extracellular. On the other hand, despite the treatment, evidences of recurrences of the tumor were present. Such evidence consisted in small collections of lymphocytoid cells and also proliferation of some vessel wall elements in the upper part of the cutis. The impression thus gained, that the lesion was recurring, was confirmed by the subsequent development of the case, as has been noted.

I had the opportunity of studying, in one case, the internal organs at postmortem examination. Nodules typical of the sarcoma of Kaposi were found in the lungs, liver and intestinal tract. The observations were similar to those in the skin, with a few essential differences, chiefly that the growth was much more diffuse, irregular and active in appearance than the growths found in the skin and so appeared much more malignant.

PATHOGENESIS

I realize that division of the developmental phases of the disease into definite stages such as I have presented may seem rather artificial and too clearcut, but, on the other hand, the findings encountered in

5. Kaposi (footnote 1, p. 602).

these various stages, both clinically and pathologically, are so representative that I feel that they depict in true fashion what actually takes place from the first appearance to the last manifestation of the disease.

It is true that the attempt to solve the pathogenesis of a tumor through study of its morphologic development often leads one astray, as von Fischer-Wasels [6] has so recently emphasized. He expressed the belief that only with the greatest care can one interpret the histogenesis of a tumor from the picture it presents in its fully developed stage. However, he admitted that if the opportunity is permitted of tracing histopathologically the development of a tumor throughout all its stages, it would be possible to draw conclusions regarding its histogenesis. Such an opportunity was possible in this study of the sarcoma of Kaposi, as a result of which I believe that the histogenesis of the disease is as follows:

The first pathologic change found was the occurrence of hemorrhage in the cutis from one or many vessels at different depths in the cutis. It is my belief that the hemorrhage is the initial pathologic feature of this disease, together with the proliferation of the vessel wall elements and cellular infiltration. The vessels in the vicinity showed engorgement and some dilatation, and there was already a deposit of iron pigment. Clinically, at this stage, if the hemorrhage is deep, nothing is found grossly other than a faint hemorrhagic macula. If the hemorrhage is more superficial, localized areas of blood, extravasation in the skin or even a diffuse pupura-like eruption may be observed.

This stage must be one of short duration, because in most of the cases at the time of examination evidence of cellular infiltrate was already present. I believe that infiltration of the round cells occurs almost simultaneously with the hemorrhage, as was noted in the lesion that I described as representing the first stage of the disease.

The cellular infiltrate displays a surprising richness of forms to which the term lymphocytoid as used by Marchand is most applicable. I feel that these cells arise from the reticulo-endothelial system for the following reasons: (1) The cells are distributed almost entirely about the blood vessels; (2) the vessel wall elements are swollen, and there is definite evidence of proliferation; (3) they form a reticulum that is present also in some places in the vessel walls themselves, thus allowing "hemorrhage by dissection" (Herzog) to take place; (4) there

6. von Fischer-Wasels, B., and Küster, E.: Metaplasie und Geschwulstbildung, in Bethe, A.; von Bergmann, G.; Embden, G., and Ellinger, A.: Handbuch der normalen und pathologischen Physiologie mit Berücksichtigung der experimentellen Pharmakologie, Berlin, Julius Springer, 1927, vol. 14, pt. 2, p. 1195.

is a multiplicity of cell forms with many transitional changes, as they are differentiated from the central vessel to the periphery of the nodule, and (5) large endothelial cells are found connected to the intima of the vessel, but are just on the verge of entering the systemic circulation and becoming transitional cells, or are already definite monocytes (figs. 5*b* and 6). These transitional cells and monocytes are found also in the tissues as well as in the circulating blood.

Schilling [7] has stated that the monocytes represent the third system of blood production in the body, the other two being lymphogenous and myelogenous. The monocytes, he is convinced, arise from the endothelial cells. In this study I have found evidence of endothelial proliferation with monocytes in the tissues and monocytosis in the differential blood smear. In this manner von Fischer-Wasel's requirement has been fulfilled, as he said that in order to state that a tumor has originated from proliferating endothelial cells, monocytosis should be present.

It is also interesting to compare the giant cells that were observed arising from vessel wall cells with similar observations noted by Baumgarten,[8] Borst [8] and Hueck [8] with the origin of the giant cells in tuberculous lesions, and by Herzog in lesions of Hodgkin's disease.

In addition, the presence of gitterfasern is perhaps further evidence of the involvement of the endothelial system, since they are found usually, as Way and Klövekorn [9] and others have described and I have confirmed in this study, around and arising from newly formed blood vessels, as demonstrated so clearly in the early angiomatous stage of the sarcoma of Kaposi. Gitterfasern are also found normally in the liver,[10] where cells of the reticulo-endothelial system are so numerous (fig. 8*b*).

As the infiltrate decreases, the vessel wall cells reveal their ability to form new blood vessels. However, this ability has been impaired, as evidenced by the presence of incompletely formed blood vessels. In these new blood vessels there is also proliferation of the vessel wall elements.

Another manifestation of the activity of the reticulo-endothelial system is found in the presence in the nodules of the sarcoma of Kaposi of sinus-like spaces lined by endothelial cells containing fine pigment granules and strongly resembling similar cells and spaces in the spleen.

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7. Schilling, Viktor: The Blood Picture and Its Clinical Significance, St. Louis, C. V. Mosby Company, 1929.

8. Borst, quoted by Herzog, Georg: Ueber die Bedeutung der Gefässwand-Zellen in der Pathologie, Klin. Wchnschr. **2**:684 (April 9) 1923.

9. Way, S. C., and Klövekorn, G. H.: Hautkrankheiten und Gitterfasern, Dermat. Ztschr. **48**:139, 1926.

10. Rössle, quoted by Way and Klöverkorn (footnote 9).

Puhr [11] has also called attention to the occurrence of these sinus-like spaces and the pigment phanerosis as a capacity of the reticulo-endothelial cells.

As the lesion becomes older, the lymphocytoid elements begin to play a lesser part and the angiomatous features become more prominent. The lymphocytoid cells, however, may later go on to form spindle-like cells, to give the picture of a sarcoma-like lesion, which I feel represents the final stage of the process. I have seen such a transition even in the earliest lesion, as I studied the polymorphism of the cells from the vessel to the periphery of the nodule where they assume the spindle-like form and produce in some places thin collagen fibers (Borst, Baumgarten and Hueck).

At times, the angiomatous features are so typical that a diagnosis of cavernous hemangioma would be justified.

Again, in cases in which the activity of the reticulo-endothelial system is more marked, the angiomatous features are present along with sarcoma-like features with mitotic figures, and the diagnosis suggested would be angiosarcoma. In such cases of increased activity I found the previously described, but so important, polymorphism of the cellular infiltrate, the whole picture representing all stages of the development of the process in the one lesion.

In one case of the series in which the internal organs were involved, the histologic picture found corresponded to the angiosarcomatous stage in the skin, except that the growth was more irregular and more wild in its manifestations than that found in the skin. The types of cells were exactly the same as those found in the cutaneous tumors. In these visceral lesions all stages of development could be found in a single lesion, just as they were found in the skin. I believe, then, that involvement of the internal structures is primary and not due to secondary metastasis from the skin.

The relationship between the presence or absence of gitterfasern and elastic fibers is interesting. In the earliest lesion, the elastic tissue is injured, or perhaps even completely destroyed throughout the whole cutis, even including parts of the cutis where the actual lesion is not present. At this time, the gitterfasern are very prominent. As the lesion develops and the angiomatous picture appears, the gitterfasern remain a striking feature, while the elastic tissue, although completely destroyed in the tumor, may be found less severely injured in the adjacent tissue. In the still later, sarcoma-like stage, there are very few gitterfasern to be found, and still no elastic tissue is present in the tumors. There is, however, an almost normal elastica in the tissues near the tumors.

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11. Puhr, Ludwig: Ueber das idiopathische multiple Pigmentsarkom der Haut (Kaposi), Arch. f. Dermat. u. Syph. **164**:167 (Oct.) 1931.

The collagen fibers in the earliest lesions may be the site, in some places, of degenerative changes of edema, homogeneization and slight vacuolization. With the van Gieson stain, bright pink, newly formed collagen fibers may be demonstrated arising from reticulo-endothelial cells. In the angiomatous stage, newly formed collagen fibers make up the stroma of the tumorous structure, while the fibers in the adjacent tissue seem normal. In the later, sarcoma-like stage, with the extremely cellular make-up of the tumor, few collagen fibers are found, whereas in the surrounding tissues the collagen fibers show regressive changes, which ultimately will be supplanted by new granulation tissue.

From the preceding description, one must be struck with the great powers possessed by the reticulo-endothelial cells to form new cells other than those that they produce under normal conditions.

I believe that cells, to have such power, can be only "embryonal cells" in the sense that they are undifferentiated and remain so until need for their differentiation arises (Herzog, Marchand, Maximow and others).

REVIEW OF THE LITERATURE

In order to obtain additional information that might cast some light on the pathogenesis of the sarcoma of Kaposi, I have analyzed the literature [12] with regard to the following points: (1) the number of cases reported or presented; (2) sex; (3) nationality (race); (4) occupation; (5) age; (6) deaths; (7) clinical variations, such as blood spots and hemorrhages, involvement of the lymph nodes, the blood picture, the vascular distribution, lymph cysts and trauma (mechanical, infectious and toxic), and (8) classification of the sarcoma of Kaposi.

A total of 356 cases of the sarcoma of Kaposi has been reported in the literature. Of these patients, 325 were male, including 5 whose ages were less than 20 years, and 21 were female, all of whom were adults.

In the literature, exclusive of my series of 16 cases, there were reports on 111 Italians, 50 Russians, 20 Poles and 45 Jews, most of whom were born in Russia or Poland, but who are not included with either the Russians or the Poles in this summary. There were also 12 Austrians, 8 Americans, 7 Hungarians and 5 Germans among the remaining subjects. The remainder of the 356 patients whose cases are reported in the literature represented nearly every nationality in the civilized world,

12. These data were obtained, whenever possible, from the original articles and demonstration of cases, but all of the points mentioned were not always found. Also, those cases that have been reported as examples of the sarcoma of Kaposi in which I could not agree on the diagnosis from the evidence presented were not included in this summary. These were usually examples of the sarcomatosis C of Kaposi and will be considered in a later paper dealing with that subject.

although many were omitted because information regarding nationality was not given.

Judging from these figures, I feel that race does not assume the important part it has formerly been thought to play in the etiology of this disease. Of 50 patients whose cases were reported from Italy by de Amicis,[13] not one was a Jew. As noted before, nearly all the Jews affected with the disease were born in Russia or in Poland. It is much more probable, then, that the distribution of the disease is geographical rather than racial, and that the vast majority of cases originate in Russia, Poland and Northern Italy.

It was found that practically all the patients with the sarcoma of Kaposi belonged to the class of laborers. Only about 20 were of the so-called "white collar" class. The remainder were those who were usually exposed to extremes of temperature, or those who performed manual labor as a means of livelihood. In the former group were included woodcutters, fishermen, sailors, farmers, soldiers, policemen, deliverymen, blacksmiths, bathhouse attendants and bakers. In the latter group were found carpenters, shoemakers, tailors, mechanics, masons and the like.

The age of the patient could be ascertained in 219 of the cases reported in the literature. In these, the distribution of the patients according to decades of life was as follows: From 1 to 10 years, 2 patients; from 11 to 20 years, 4 patients; from 21 to 30 years, 12 patients; from 31 to 40 years, 20 patients; from 41 to 50 years, 33 patients; from 51 to 60 years, 58 patients; from 61 to 70 years, 55 patients; from 71 to 80 years, 28 patients, and from 81 to 90 years, 7 patients. From this summary it is seen that the largest number of patients were between the ages of 40 and 80 years.

Since Kaposi's[14] fundamental paper, published in 1872, it has been known that this disease afflicts chiefly elderly persons and much more frequently men than women. My summary confirms this, but discloses also that younger persons are not immune. On the other hand, it is seen that many younger persons are also afflicted with the sarcoma of Kaposi, or that the earliest signs of the disease appeared while the patient was quite young, to be followed by the appearance of the typical syndrome at a later date.

As to the duration of the disease, Kaposi's original impression was that the disease was rapidly fatal in from two to three years. Several years later he decided that the average duration was from about five

13. de Amicis: Gazz. d. osp., May 30, 1897, no. 64, p. 685; abstr., Arch. f. Dermat. u. Syph. **48**:275 (Feb.) 1899.

14. Kaposi, Moriz: Idiopathisches multiples Pigmentsarkom der Haut, Arch. f. Dermat. u. Syph. **4**:265, 1872.

to ten years. This has been the impression of many writers since Kaposi's time. However, many cases have been recorded in which the disease has lasted as long as twenty-five years, and it does not always prove fatal.

Of the 37 fatal cases recorded, most of them were studied thoroughly at postmortem examination. Kaposi, Semenow [15] de Amicis, Philippson,[16] Saphier,[17] Dillard and Weidman [18] and others reported complete observations in such cases.

In this survey it was found that the duration of the disease varied from eight months to twenty-five years (Mariani [19] and Prokopčuk and Čuvalova [20]), and this variation in duration was not dependent on the age of the patient. Among young persons, as well as among old ones, the course has been rapid and progressive. My earlier findings gave me the impression that the disease was more rapidly fatal to younger than to older patients, but this was not borne out by further investigation. In the 29 cases in which the age at death was given, only 6 patients were less than 40 years, whereas 10 died in the sixth decade of life. Further, it was found that the prognosis did not depend on the patient's race; approximately the same percentage of deaths occurred among Jews, Russians, Italians and others.

Postmortem examination revealed so-called metastasis invading nearly every organ of the body. The most frequently involved structures were the gastro-intestinal tract, including all portions from the mouth to the rectum; then the liver, the lungs and the retroperitoneal and mesenteric lymph nodes, in this order. Other organs involved less frequently, but still not rarely, included the spleen, pancreas, kidneys, suprarenal glands, peritoneum (including the omentum), testes, epididymis, trachea, bronchi, pleura and heart muscle. More rarely, the central nervous system and peripheral nerves were involved. Ramel [21] found

15. Semenow, T. V.: Zehn Fälle des Sarcoma idiopathicum pigmentosum multiplex cutis, Monatsh. f. prakt. Dermat. **25**:539, 1897.

16. Philippson, L.: Ueber das Sarcoma idiopathicum cutis Kaposi: Ein Beitrag zur Sarcomlehre, Virchows Arch. f. path. Anat. **167**:58, 1902.

17. Saphier, Johann: Zur Kenntnis des Sarcoma idiopathicum multiplex haemorrhagicum Kaposi, Arch. f. Dermat. u. Syph. **118**:671, 1913.

18. Dillard, G. J., and Weidman, F. D.: Multiple Hemorrhagic Sarcoma of Kaposi, Arch. Dermat. & Syph. **11**:203 (Feb.) 1925.

19. Mariani, Guiseppe: Sarkomatosis Kaposi mit besonderer Berücksichtigung der viszeralen Lokalisationen, Arch. f. Dermat. u. Syph. **98**:267, 1909; Ueber des Sarkoma idiopathicum Kaposi, ibid. **97**:334, 1909.

20. Prokopčuk, A., and Čuvalova: Zur Frage des multiplen idiopathischen hämorrhagischen Sarkoma Kaposi, abstr., Zentralbl. f. Haut- u. Geschlechtskr. **28**:171, 1928.

21. Ramel, E.: Sarcoma idiopathicum haemorrhagicum (Kaposi), Bull. Soc. franç. de dermat. et syph. **33**:557, 1926; abstr., Zentralbl. f. Haut- u. Geschlechtskr **22**:657, 1927.

a typical nodule in the base of the skull and in the sulcus transversus. The faucial tonsil in many cases and the root of the tongue in one case also were affected. The osseous system is frequently involved, and this is found not only at necropsy, but also clinically, because since Scholtz [22] published his observation in 1900 clinical and roentgenologic examinations of the bones have usually been made in the study of examples of the sarcoma of Kaposi.

Death in most of these cases resulted after prolonged, progressive wasting and emaciation. In some cases, however, the patients died of intercurrent disease, such as pneumonia, pleuritis, renal disease, tuberculosis (pulmonary and intestinal), tabes dorsalis and advanced arteriosclerosis, carcinoma, acute edema of the larynx and other causes. In one case, a tumorous nodule eroded into a pulmonary vessel and caused immediate death from hemorrhage. Ordinarily, involvement of the skin preceded visceral involvement, but in a case reported by Paolini,[23] clinical symptoms of disturbance in the intestinal tract appeared before any lesions could be found in the skin, and at postmortem examination the intestinal symptoms were explained by finding numerous nodules of the sarcoma of Kaposi in the large and in the small bowel. At the time of death, typical nodules were also present in the skin, lungs, spleen and mesenteric and retroperitoneal lymph nodes.

CLINICAL FEATURES

The clinical features reviewed in the literature include: (1) a change in the blood picture and involvement of the lymphatic system; (2) hemorrhage, as exemplified by petechiae, ecchymoses and purpura-like lesions; (3) changes in the vessels, such as varicosities and distribution of the tumors along and fixed to the vessels, and (4) preceding trauma, by mechanical, toxic or infectious factors. I shall briefly discuss these factors.

Blood Picture.—Anemia was found in many cases. The value for hemoglobin was as low as 33 per cent in one case, and in others there were varying degrees of anemia; in still other cases, the values for hemoglobin were normal. Similarly, erythrocytes numbered from 2,578,270 cells in each cubic millimeter to normal. The color of the skin of these patients with marked anemia was frequently commented on by the examiner, and was noted as clay or lemon-colored by Bern-

22. Scholtz: Multiples idiopathisches Hautsarcom (Kaposi), Arch. f. Dermat. u. Syph. **51**:309 (Nov.) 1899.

23. Paolini, Renato: Ueber ein multiples Kaposi-Sarkom mit besonderer Rücksicht auf Lokalisation in den Innenorganen, Zentralbl. f. Haut- u. Geschlechtskr. **26**:816, 1928.

hardt, de Amicis, Riehl [24] and others. Other authors who noted anemia included Steiner,[25] Hartzell,[26] Funk,[27] Bernard,[28] de Amicis, Riehl, Mariani, Lieberthal [29] and Dillard and Weidman.

There is no characteristic total leukocyte count, as revealed by study of the cases in the literature, although in a few cases there was definite leukocytosis.

The differential leukocyte count was characterized by few abnormalities. There were occasional disturbances in the relative proportions of polymorphonuclear leukocytes and lymphocytes, but these were usually insignificant. The most striking feature was the rather frequently found monocytosis, and also, less frequently, eosinophilia. For instance, Wende [30] reported 12.12 per cent large monocytes; Dalla Favera,[31] 28.2 per cent large monocytes and 9.9 per cent transitional cells; Grigorjew,[32] 22.5 per cent transitional cells and 6 per cent eosinophils; Rottmann,[33] 5.5 per cent monocytes; Winternitz,[34] 8 per cent monocytes and 9 per cent eosinophils; Paolini, 8 per cent monocytes, 3 per cent eosinophils and 2 per cent Türck's cells; Bechet,[35] 9 per

24. Riehl: Sarcomatosis cutis idiopathica, Arch. f. Dermat. u. Syph. **70**:134, 1904; Ein Rhinosklerom und einen Fall von hämorrhagischen Hautsarkom, ibid. **74**:81, 1905.

25. Steiner: Pigmentsarkome der Extremitäten, Berl. klin. Wchnschr. **33**: 634, 1896.

26. Hartzell, M. B.: Sarcoma Cutis, J. Cutan. Dis. **11**:15 (Jan.) 1893; Idiopathic Multiple Haemorrhagic Sarcoma (Kaposi), ibid. **26**:97 (March) 1908.

27. Funk: Klinische Studien über Sarkome der Haut, Monatsh. f. prakt. Dermat. **8**:19 and 60, 1889.

28. Bernard, Robert: Sarcomata idiopathica multiplicia pigmentosa cutis (Kaposi), Arch. f. Dermat. u. Syph. **49**: 207, 1899; Weitere Mittheilungen über Sarcoma idiopathicum multiplex pigmentosum cutis, ibid. **62**:237, 1902; Sarcoma idiopathicum multiplex en plaques pigmentosum et lymphangiectodes, ibid. **63**: 239, 1902.

29. Lieberthal, David: Sarcomatosis Cutis, J. A. M. A. **39**:1454 (Dec. 6) 1902; Idiopathic Multiple Hemorrhagic Sarcoma (Kaposi), ibid. **51**:1204 (Oct. 10) 1908; Idiopathic Multiple Haemorrhagic Sarcoma (Kaposi); Trauma an Aetiological Factor (?), J. Cutan. Dis. **27**: 522 (Nov.) 1909.

30. Wende, G. W.: A Case of Multiple Idiopathic Pigmented Sarcoma, J. Cutan. Dis. **16**:205 (May) 1898.

31. Dalla Favera, G. B.: Ueber das sogenannten Sarcoma idiopathicum multiplex haemorrhagicum (Kaposi), Arch. f. Dermat. u. Syph. **109**:387, 1911.

32. Grigorjew, P. S.: Zur Kenntnis des multiplen idiopathischen hämorrhagischen Sarkoms (Kaposi), Arch. f. Dermat. u. Syph. **146**:384 (Feb.) 1924.

33. Rottmann, H. G.: Zur Kenntnis des Sarcoma idiopathicum multiplex haemorrhagicum (Kaposi), Arch. f. Dermat. u. Syph. **154**:134 (Dec.) 1927.

34. Winternitz, R.: Multiples hämorrhagisches Pigmentsarkom Kaposi, Zentralbl. f. Haut- u. Geschlechtskr. **24**:161, 1927.

35. Bechet, in discussion on Bechet: Kaposi's Sarcoma, with Unusual Features, Arch. Dermat. & Syph. **18**:321 (Aug.) 1928.

cent monocytes, 8 per cent eosinophils and 1 per cent transitional cells; Vigne,[36] 9 per cent monocytes and 5.5 per cent eosinophils.

Involvement of Lymphatic System.—Kaposi's original conception was that the lymph nodes were involved only when the sarcomatous lesions were ulcerated or secondarily infected. Many of those who followed Kaposi held the same idea, and it is true that ordinarily this is correct. However, several cases have been reported in the literature in which the lymph nodes presented a typical picture of the sarcoma of Kaposi, or in earlier lesions, swelling and proliferation of the endothelial cells in the blood vessels and in the supporting reticulo-endothelial system of the nodes. Such features were recorded by Hartzell, Sellei,[37] Stratton[38] and Dillard and Weidman. The tonsils are enlarged in some cases, as has been reported by Funk, Mariani, Krupnikow,[39] Wise[40] and others.

Hemorrhage.—Philippson emphasized the fact that hemorrhage, infiltration about the blood vessels, proliferation of the vessel wall elements and formation of new blood vessels were manifestations of the influence of a toxin that he thought was due to an unknown microorganism. In his first case, the patient had had typical nodules of the sarcoma of Kaposi for six months, when suddenly a hemorrhagic, purpura-like eruption appeared generally over his whole body. Some of the hemorrhagic spots receded entirely, but where others had been, new, typical nodules appeared. A total of about two months elapsed between the appearance of the hemorrhagic spot and the fully developed nodule in the same area. Three months later, another hemorrhagic eruption appeared, but this time it was limited to the lower extremities. Later, another generalized eruption appeared. From some of the hemorrhagic lesions on each occasion, new nodules of the sarcoma of Kaposi developed. In a second case, a similar eruption involving both legs and the left forearm also gave rise to new nodules. Mendes da Costa[41] recorded the case of a man, aged 76, who had extravasations of blood on both lower extremities, followed by typical nodules of the sarcoma of Kaposi in these areas. He concluded that the extravasation of blood

36. Vigne, P.: Un nouveau cas de sarcomatose de Kaposi, Bull. Soc. franç. de dermat. et syph. **37**:445 (April) 1930.

37. Sellei, Josef: Beiträge zur Pathologie des Kaposichen "Granuloms," Monatsh. f. prakt. Dermat. **34**:497 (May) 1902.

38. Stratton, E. K.: Multiple Hemorrhagic Sarcoma of Kaposi, Urol. & Cutan. Rev. **32**:71, 1928; abstr., Zentralbl. f. Haut- u. Geschlechtskr. **27**:288, 1928.

39. Krupnikow, D. P.: Zur Frage des multiplen idiopathischen hämorrhagischen Sarcoma Kaposi, Zentralbl. f. Haut- u. Geschlechtskr. **9**:117, 1923.

40. Wise: Sarçoma of Kaposi, Arch. Dermat. & Syph. **18**:982 (Dec.) 1928.

41. Mendes da Costa: Ein Fall von Kaposis Pigmentsarkom, Dermat. Stud. **20**:212, 1910.

was the earliest sign of this disease, which he thought was endothelioma scattered diffusely about the vessels. Dillard and Weidman favored the conception that hemorrhage was the primary factor in production of the lesions. They believed that hemorrhage might be secondary to exposure to cold, arteriosclerosis, ergotism and so forth. Then, as the blood disintegrated, the substances produced might in some cases be irritating to the endothelial cells and act as stimuli to their proliferation. Kaposi may also have observed this phenomenon without attaching a great deal of significance to it, because in one case he mentioned the development of sarcomatous nodules on the basis of preceding cutaneous hemorrhages. The presence of numerous small nodules within a large hemorrhage on the thigh was observed in a case by Dalla Favera. Others who more or less casually mentioned the presence of hemorrhages were Havas,[42] Funk, Köbner,[43] Bernard, Riehl, Pelagatti,[44] Pick,[45] Mariani, Brann and Seuffer [46] and Semenow. In addition to the presence of cutaneous hemorrhages, cases have been recorded in which hemorrhages from the nose, mouth, intestinal tract, lungs, etc., have taken place (Semenow, Paolini and Brann and Seuffer). Changes analogous to those in the blood vessels are found less frequently in the lymphatic vessels. Such observations have been recorded by Pick, who noted the presence of large lymphatic cysts on the extremities, which later became slightly hemorrhagic, and still later developed into typical Kaposi nodules. These lymphatic cysts did not always become hemorrhagic; sometimes typical nodules developed directly from clear cysts.

Vascular Changes.—These may appear as varicosities with tumors distributed along the vessels and fixed to them. Funk, in 1889, first noticed the presence of venous ectasia and coiled, enlarged veins near the tumors. In 1899, Kaposi [47] presented a case of typical sarcoma of Kaposi, which had been seen previously by Lang, who had noted dilated

42. Havas: Ein Fall von Sarcoma idiopathica multiplex cutis pigment. Orvosi hetil. **31**:1061, 1887; translated, Pest. med.-chir. Presse **23**:800, 1887; abstr., Arch. f. Dermat. u. Syph. **20**:283, 1888.

43. Köbner, Heinrich: Zur Kenntnis der allgemeinen Sarcomatose und der Hautsarcome im besonderen, Arch. f. Dermat. u. Syph. **1**:369, 1869; Krankenvorstellung, ibid. **23**:119, 1891.

44. Pelagatti, M.: Die Hautsarkomatose, Monatsh. f. prakt. Dermat. **35**: 249 (Sept.) 1902; Ueber das Sarcoma multiplex Kaposi, Arch. f. Dermat. u. Syph. **83**:278, 1907.

45. Pick, Walther: Zur Kenntnis des Kaposi'schen Pigmentsarkoms, Arch. f. Dermat. u. Syph. **87**:267, 1907.

46. Brann, Günther, and Seuffer, Edgar: Sarcoma idiopathicum multiplex haemorrhagicum (Kaposi), Arch.f.Dermat.u.Syph. **141**:69 (Aug.) 1922.

47. Kaposi, Moriz: Sarcoma multiplex pigmentosum, Arch. f. Dermat. u. Syph. **49**:133, 1899.

veins on the lower extremities. Sellei, Philippson, Halle,[48] Selhorst and Polano,[49] Mariani, Dalla Favera, Ehrmann,[50] Brann and Seuffer and Hedge [51] noted the distribution of nodules of Kaposi along the venous system. Lieberthal and others recorded cases with extensive thrombophlebitis. Saphier, on postmortem examination, found in a case of sarcoma of Kaposi enlarged and indurated venous stems and nerve trunks. Along and within the vessel walls and sheaths of nerve trunks was found, microscopically, tissue typical of sarcoma of Kaposi. Brann and Seuffer were able to watch the development of such a tumor from its origin from the wall of the vessel to its attachment to the skin within twenty-four hours.

Trauma.—Mechanical, toxic or infectious injury may likewise be a factor. Examples of mechanical injury preceding the development of the nodules of Kaposi in the injured areas were recorded in many cases. In 1902, one of Lieberthal's patients injured his leg when he fell off a street-car. One month later, painful swelling and nodules of Kaposi developed on the injured leg, this being the first appearance of the disease. In 1904, Ledermann's [52] patient had had typical nodules for three years, when his arm was bitten by a horse. New nodules appeared in this area after a short time. In 1905, Weber and Daser [53] reported a case in which the patient had stepped on a nail. A pedunculated nodule developed in this area. This was excised, and later typical nodules of Kaposi appeared on the extremities and penis. Pick, Wallhauser,[54] Zumbusch,[55] Dalla Favera, Vogel,[56] Chargin,[57] Hedge,

48. Halle, August: Ein Beitrag zur Kenntnis des Sarcoma idiopathicum multiplex haemorrhagicum (Kaposi), Arch. f. Dermat. u. Syph. **72**:373, 1904.

49. Selhorst, S. B., and Polano, M. E.: Ein Fall von Sarcoma idiopathicum multiplex haemorrhagicum Kaposi, Arch. f. Dermat. u. Syph. **82**:33, 1906.

50. Ehrmann: Sarcoma idiopathicum haemorrhagicum Kaposi, Arch. f. Dermat. u. Syph. **107**:444, 1911.

51. Hedge: Sarcoma, Arch. Dermat. & Syph. **16**:94 (July) 1927.

52. Ledermann: Ein Fall von Lupus, Arch. f. Dermat. u. Syph. **70**:144, 1904.

53. Weber, F. P., and Daser, Paul: Idiopathic Multiple Pigment Sarcoma (Idiopathic Multiple Haemorrhagic Sarcoma) of Kaposi, Brit. J. Dermat. **17**: 135 (April) 1905.

54. Wallhauser, H. J. F.: Bichloride of Mercury in the Treatment of Idiopathic Multiple Hemorrhagic Sarcoma, J. A. M. A. **53**: 1608 (Nov. 13) 1909.

55. Zumbusch, Leo: Multiples, idiopathisches Hautsarkom mit Knochenmetastasen, Arch. f. Dermat. u. Syph. **107**:329, 1911.

56. Vogel: Fall von hochgradiger syphilitischer Phlebitis der Vena saphena magna, Arch. f. Dermat. u. Syph. **125**:365, 1920.

57. Chargin: Idiopathic Multiple Hemorrhagic Sarcoma of Kaposi, Arch. Dermat. & Syph. **8**:97 (July) 1923.

Jeanselme [58] and his associates and Feit [59] also recorded cases in which there was little question of the relationship between mechanical injury and the subsequent appearance of tumors in the injured areas, and later in the typical distribution of the disease.

Exposure to cold has frequently been named as a factor in the development of nodules of Kaposi, in addition to other toxic factors, such as chronic alcoholism, abuse of tobacco and infectious diseases, both local and general. Vague types of erysipelas have also been reported as immediately preceding the appearance of nodules of Kaposi, in addition to lymphangitis and cellulitis.

Arteriosclerosis and other vascular changes, such as are found in syphilis, have been reported frequently by many authors. The vascular changes were usually found at postmortem examinations, but the high incidence of such changes is probably explicable on the basis of the advanced age of the patients.

In some cases no definite preceding factor was found, but often vague, prodromal symptoms were present, such as rheumatic pains, which were recurrent and subject to variations in weather (Steiner and others). In one case reported by Pelagatti there was paralysis of one side of the body, and, when sarcoma of Kaposi appeared, it was first limited to this paralyzed side, and always remained more severe on this side, although less severe manifestations were later present on other parts of the body. In 1926, Uhlmann's [60] patient had sustained a fracture of the upper part of his arm, followed by paralysis, and this was the extremity first affected by sarcoma of Kaposi.

CLASSIFICATION OF SARCOMA OF KAPOSI

The first mention of cutaneous sarcoma is found in Köbner's report, in which he described two cases of metastatic sarcoma in the skin. Kaposi's first article about the group of sarcomas that has been discussed in this paper appeared in 1872. He presented his classic description of five cases and called them examples of idiopathic multiple pigmented sarcoma of the skin. He emphasized the peculiar characteristic of these cases and sharply distinguished them from the cases reported by Köbner. Several years later, Tanturri [61] proposed the name "sarcoma idiopathicum telangiectodes." In 1889, Funk suggested

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58. Jeanselme, E.; Huet, L., and others: À propos d'un cas de sarcomatose de Kaposi: Étude anatomo-clinique et essai d'inoculation aux gallinacés, Bull. Soc. franç. de dermat. et syph. **35**:384 (May) 1928.

59. Feit: Sarcoma (Kaposi), Arch. Dermat. & Syph. **18**:611 (Oct.) 1928.

60. Uhlmann, Erich: Beitrag zur Frage des Sarcoma idiopathicum multiplex haemorrhagicum Kaposi, Arch. f. Dermat. u. Syph. **150**:126 (Feb.) 1926.

61. Tanturri: Beobachteten Fällen von idiopathischem Hautsarkom und liefert folgendes Résumé, Arch. f. Dermat. u. Syph. **10**:461, 1878.

"sarcomatosis gummatodes." The name that has persisted until now was first proposed by Köbner in 1891, "sarcoma idiopathicum multiplex hemorrhagicum." In 1894, Kaposi [62] agreed to this name, since he had from the beginning realized that the pigment that he had described in the tumors was hemosiderin. Since that time a variety of descriptive terms has been suggested by numerous authors. The fact that so many names have been recommended is evidence of the varied conceptions as to the place the disease occupies.

The different hypotheses that have been offered to explain the tissue or the process that is the origin of this disease are briefly as follows: (1) true blastoma (Kaposi and others); (2) Albrecht's hamartoma, a tumorous formation derived from germ plasm (Sternberg [63] and Brann and Seuffer); (3) infection (granuloma) (Sellei and others); (4) nerve tissue (Semenow, Pautrier and Diss [64] and Saphier), and (5) reticulo-endothelial disease (Dillard and Weidman, Dörffel [65] and Puhr).

COMMENT AND SUMMARY

On the basis of the present study and corroborative evidence found in the literature, I believe that the sarcoma of Kaposi is a disease of the reticulo-endothelial system, which disease is, a priori, not a true blastoma, but which may become one in some cases after long-continued irritation. However, I hesitate to employ the term "reticulo-endotheliosis," since it does not clearly include all the manifestations of the disease and since it has been used also in designating other diseases, such as mycosis fungoides. The term does not indicate precisely that the third leukocytic system, the monocyte system, is affected as I have demonstrated in this study. Neither does it suggest the embryonal character of these undifferentiated reticulo-endothelial cells (Herzog).

A brief summary of the evidence developed in this paper, which supports my belief, includes the following points: (1) The vascular system throughout the body is the site of definite clinical changes, such as ectasia, varicosities and purpuric lesions; (2) nodules may be found distributed along the vessels and adherent to the vessels; (3) microscopically, newly formed capillaries and a polymorphous cellular infiltrate are found, the cells of which arise from the reticulo-endothelial system

62. Kaposi, Moriz: Zur Nomenclature des idiopathischen Pigmentsarcoms Kaposi, Arch. f. Dermat. u. Syph. **29**:164, 1894.

63. Sternberg, Carl: Ueber das Sarcoma multiplex haemorrhagicum (Kaposi), Arch. f. Dermat. u. Syph. **111**:331, 1912.

64. Pautrier, L. M., and Diss, A.: Kaposi's Idiopathic Sarcoma is Not a Genuine Sarcoma but a Neurovascular Dysgenesis, Brit. J. Dermat. **41**:93 (March) 1929.

65. Dörffel, J.: Ueber einen Fall von Endotheliosis im Kindesalter, Dermat. Wchnschr. **89**:1178, 1929.

(lymphocytoid cells); (4) the monocytic system is affected, as evidenced by an increased number of monocytes in the tissues and monocytosis in the differential blood smear, and (5) the presence of gitterfasern throughout the infiltrate may add further weight to this contention, but present knowledge of gitterfassern does not permit too definite conclusions on this point.

CONCLUSIONS

The sarcoma of Kaposi is a disease of the reticulo-endothelial system, including a disturbance in its monocytogenetic function, which at times may terminate in true malignancy.

KERATODERMA PALMARIS ET PLANTARIS

(KERATODERMA PUNCTATUM); REPORT OF A CASE

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The condition known as keratoderma palmaris et plantaris is sufficiently rare to warrant the report of an additional case.

Symmetrical keratosis involving the palms and soles was described by Krost [1] in 1880. A few years later, Unna [2] pointed out the etiologic difference of this type of condition from ordinary callositas in that the external irritating factor is absent in the former. Hyde,[3] Besnier,[4] Crocker [5] and others added their contributions to the existing literature, and it soon became apparent that there were several varieties of keratodermas.

Kiess [6] described and classified the various hereditary keratomas of the palms and soles into three types as follows: First, a type that is limited exclusively to the palms and soles. It manifests itself shortly after birth by a bluish line, which divides the plantar and dorsal surfaces. The beginning of the keratoma formation becomes apparent only after a few months, particularly when the plantar surfaces begin to be used. There follow a progressive reddening, yellow discoloration and at times excessive secretion of sweat. Between this and the well pronounced characteristic disease picture, there are numerous stages or transitional forms, which differ from each other by a greater or lesser intensity of the hyperkeratosis. During the terminal stage, the palmar and plantar surfaces, or only one surface of the hand or foot, is found to be surrounded by a bluish-red line. The surface itself is covered by a horny layer, at times reaching the thickness of 1 cm., the margins of which may appear quite moist. In the course of time the thick hornified layer is desquamated and reveals a reddened surface with well pronounced linear striations; in other cases, the horny masses are separated into a number of regions of irregular oblique and transverse

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1. Krost, quoted by Abraham, in Allbutt, T. C., and Rolleston, H. D.: System of Medicine, New York, The Macmillan Company, 1911, vol. 9.

2. Unna: Ueber das Keratoma palmare et plantare hereditarium, Vrtljsschr. f. Dermat. **10**:231, 1883.

3. Hyde: M. News **51**:416, 1887; Tr. Third Internat. Dermat. Cong., London, 1896.

4. Besnier, in Unna, P. G., and others: Internationaler Atlas von seltener Hautkrankheiten, Leipzig, Leopold Voss, 1889, plate V.

5. Crocker: Brit. J. Dermat. **3**:169, 1891.

6. Kiess, O., in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1930, vol. 14, p. 619.

furrows. If proliferation of these separated hyperkeratotic fields takes place, there may develop ridges of from 5 to 6 cm. in height. Occasionally the disease extends to the sides of the fingers and tendons and over the heels. This extension to contiguous regions may be found in such conditions as mal de Meleda, in which there is usually an involvement of the skin over the wrist, elbow and knee joints.

Another group is one in which the keratotic changes appear in the form of striae and islands, a group of diseases recently described by Fuhs and Riehl and others. In this group, besides the palmar and plantar changes, there are also changes in the region of the nails, icthyosis of a slight degree on the extensor surfaces of the extremities, leukoplakia-like foci in the mucosa of the mouth and anomalies such as pachyonychia congenita, tylomas, leukokeratosis linguae, etc.

The third group is one represented by "keratoma hereditarium dissipatum palmare et plantare," or, as described by many, "keratoderma punctatum." This type of keratosis is represented by small individual foci not only limited to the palmar and plantar surfaces, but also localized on the volar surfaces of the fingers. The eruption consists of lesions ranging in size from that of a pinpoint to that of a millet seed, situated on a slightly elevated base and separated from the normal epidermis by a fine fissure; occasionally the latter is absent. The larger lesions are frequently slightly undermined at the edge and rather flat, with a slight indentation in the center. The larger nodules consist of a narrow, hyperkeratotic, opaque white-yellowish wall adherent to the contiguous skin and demarcated by a shallow excavation. The central indentation is not always present, but may be filled by thick hornified epithelium.

The type of case belonging to the third group was described as early as 1879 by Davies-Colley.[7] Later Buschke and Fischer[8] described a case in which the lesions were present on the palms and soles and consisted of horny nodules, pitted in the center, without an erythematous halo. The colored plate in their report gives an excellent picture of the condition. Brauer's[9] patient gave a hereditary history. Brauer described the condition under the name "keratoma hereditarium dissipatum palmare et plantare." Matsumoto[10] described an eruption with punctate hyperkeratotic nodules occurring in a girl. In this case, however, there was no history of heredity or any central pitting. Galloway and Adamson[11] and Braun[12] reported cases in which there were hyper-

7. Davies-Colley: Tr. Path. Soc. London **30**:451, 1879.

8. Buschke and Fischer, in Neisser, A., and Jacobi, E.: Ikonographia dermatologica, Berlin, Urban & Schwarzenberg, 1910, p. 183.

9. Brauer: Arch. f. Dermat. u. Syph. **114**:211, 1913.

10. Matsumoto, S.: J. Cutan. Dis. **36**:280, 1918.

11. Galloway, J., and Adamson, H. G.: Brit. J. Dermat. **30**:123, 1918.

12. Braun: Arch. f. Dermat. u. Syph. **139**:201 (March) 1922.

keratotic punctate nodules with central pitting. In the latter's cases, which were in a man and his daughters, the histologic picture coincided with that found in Brauer's and Buschke and Fischer's cases. Galloway and Adamson's case had a familial history. Oppenheim,[13] Sweitzer,[14] White,[15] Heller[16] and Semon[17] have reported cases under the name "keratoderma punctatum," which apparently belong to this group. Sweitzer, in his report, stressed the fact that in a true case of keratoderma punctatum there should not be present a generalized hyperkeratosis or erythema at the edges of the lesions. This was found to be so in my case. Neuber,[18] however, expressed the belief that the presence of a hyperemic border or halo is an inconstant and irrelevant symptom, and that with the aging of the lesions, it disappears entirely.

The case herewith described falls into the third group.

A man, aged 53, came to the hospital for a condition that was subsequently diagnosed as "bronze diabetes." In the course of a routine physical examination it was noted that there was a cutaneous eruption on the palms and soles. The patient stated that he had had this eruption for the past twenty-five years. On closer questioning, he gave a history of a prior eruption in the same regions, but was not definite about its character. There had been no remissions in the condition, and there was no history of the ingestion of arsenic. On the palms and soles, extending somewhat to the wrists and dorsal surfaces of the fingers, and the back of the heels were numerous round and oval hyperkeratotic lesions, which were from yellowish gray to dark gray. The skin between the lesions was grayish and slightly thickened, and felt rather tough to the touch. The lesions varied in size from that of a pinhead to that of a pea. Most of them were elevated above the surrounding skin, some more than others, and presented central depressions or pits, which gave the lesions a crater-like appearance. The elevations were as much as 3 or 4 mm. above the surrounding skin. The smaller lesions were more numerous along the outer border of the involved regions, and but few, if any, lesions were present in the normal flexion creases.

Histopathology.—A description of the histologic findings of a clinically typical lesion removed from the palm was as follows: Throughout the cutis there was a definite but slight interstitial edema. The collagen bundles were normally stained. The papillary bodies were narrow and long at the margin of the section, whereas in the center of the specimen they were short and broad, some being almost effaced. The vessels in the zone immediately below were dilated, the walls of some being edematous. There were dilated capillaries in the broadened papillary bodies. Very little cellular reaction was to be seen, the few cells present being lymphocytic. The epidermis in the central portion of the specimen was acanthotic. Where there was acanthosis, the granular layer was increased, whereas at the margins of the specimen, where the epidermis was not acanthotic,

13. Oppenheim: Dermat. Wchnschr. **75**:1115 (Nov. 11) 1922.
14. Sweitzer, S. E.: Keratoderma Punctatum, Arch. Dermat. & Syph. **8**:687 (Nov.) 1923.
15. White, S. C.: Urol. & Cutan. Rev. **34**:394 (June) 1930.
16. Heller, N. B.: Urol. & Cutan. Rev. **34**:822 (Dec.) 1930.
17. Semon: Proc. Roy. Soc. Med. **22**:349, 1929.
18. Neuber E.: Arch. f. Dermat. u. Syph. **162**:197 (Oct.) 1930.

the granular layer was identified with some difficulty. A dense hyperkeratosis covered the entire epidermis. This horn formation was thicker than the entire cutis. No parakeratosis existed over the central portion, some suggestion, however, being present in the lateral portion. The spiral opening of the sweat ducts through the horny layer was still intact.

Keratoderma palmaris et plantaris, showing lesions on the palm.

SUMMARY

1. A case of symmetrical keratosis of the palms and soles is reported. No history or evidence of familial occurrence could be obtained.

2. A brief description and classification of the symmetrical keratodermas and a review of the literature are given.

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SCLEROMA

REPORT OF A CASE

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In 1914 and 1916,[1] I reported a case of rhinoscleroma with the history and photographs of the patient during the periods before and after successful roentgen treatment. This was the first case reported in California, and the one presented in this paper constitutes the second.

In an interesting article on rhinoscleroma, Figi and Thompson [2] reported three cases observed in the Mayo Clinic and suggested that the disease should be called "scleroma" because "in a large proportion of cases the infection is by no means limited to the nose."

The absence of outer nasal lesions in the case reported in this paper led my associates and me to overlook the diagnosis for a time. A member of our staff, Dr. Esteban Reyes, of San Salvador, called attention to the fact that in the district from which our patient came, there were many cases of rhinoscleroma without external lesions. Biopsy was then done and examination of scrapings made, which readily established the diagnosis.

REPORT OF A CASE

History.—E. F., a mechanic, aged 39, unmarried, a native of San Salvador, complained of hoarseness and difficulty in breathing of six years' duration. The family history was unimportant. The patient was born in San Salvador. He had always been strong and well. About twenty years before he consulted us he had had a genital "chancre" with no sequelae that were recognized.

In 1921, he fractured his tibia and made a good recovery. Fourteen months before he had a boil on the right leg which soon subsided. There was no history of past cardiovascular, respiratory or gastro-intestinal disease. His digestion had always been good. He had not had a genito-urinary disease.

About six years before we saw him a choking feeling in the throat and dyspnea gradually developed; two years later the condition had become severe. At times the patient had severe choking spells with pronounced dyspnea. There was a constant hacking cough, producing thick, tenacious sputum. This condition did not affect his digestion.

Examination by several nose and throat specialists resulted in a clinical diagnosis of syphilis in spite of eight negative Wassermann tests. Examination of the

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Read at the Fifty-Fifth Annual Meeting of the American Dermatological Association, Havana, Cuba, May, 1932.

1. Alderson, H. E.: J. Cutan. Dis. **34**:198 (March) 1916.

2. Figi, F. A., and Thompson, L.: Rhinoscleroma, J. A. M. A. **91**:637 (Sept. 1) 1928.

sputum gave negative results, but Frisch bacilli were not looked for. The patient was given eight injections of neoarsphenamine and twelve of bismuth and a course of inunctions with mercury and potassium iodide. This treatment did not have the slightest effect on the disease.

An examination of the nose and throat by Dr. Bacher in 1926 revealed that the right nasal vestibule was greatly narrowed by thickening of the septum inferiorly and by an easily bleeding polypoid mass superiorly. There was a similar red, soft, thickening on the left side of the nasal septum inferiorly. There was no growth around either outer nostril. The uvula and the adjacent part of the soft palate were destroyed by the process, and the soft palate was adherent to the posterior pharyngeal wall, admitting only a small probe to the nasopharynx.

In March, 1931, this condition and the presence of a reddish thickening of the hard palate were noted. Biopsy was performed on a specimen from the hard

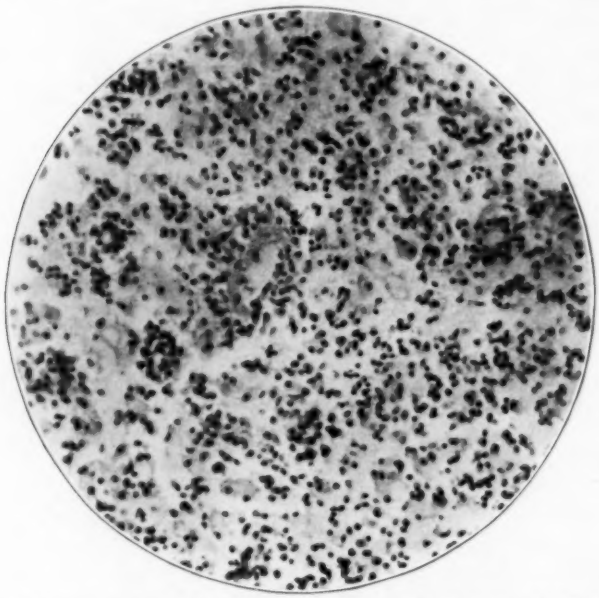

Fig. 1.—Low power magnification illustrating the density of the infiltration. Hematoxylin-eosin stain; × 90. (Figures 1, 2 and 3 were prepared by Dr. Stuart C. Way.)

palate, and smears and scrapings were made. Examination of the latter as well as cultures established the diagnosis of rhinoscleroma. The patient's general physical condition was favorable.

The following report of the histologic pathology and the photomicrographs were prepared by Dr. Stuart C. Way.

Microscopic Report.—Tissue from the hard palate was examined.

Epidermis: There was marked thinning of the entire layer to the extent that there were only one or two rows of cells in a few places. Nevertheless, an occasional greatly elongated interpapillary process existed. Evidence of the underlying pathologic condition was entirely lacking.

Subepidermal Structure: The corium and underlying structures suggested a chronic inflammatory process characterized by the growth of new connective tissue

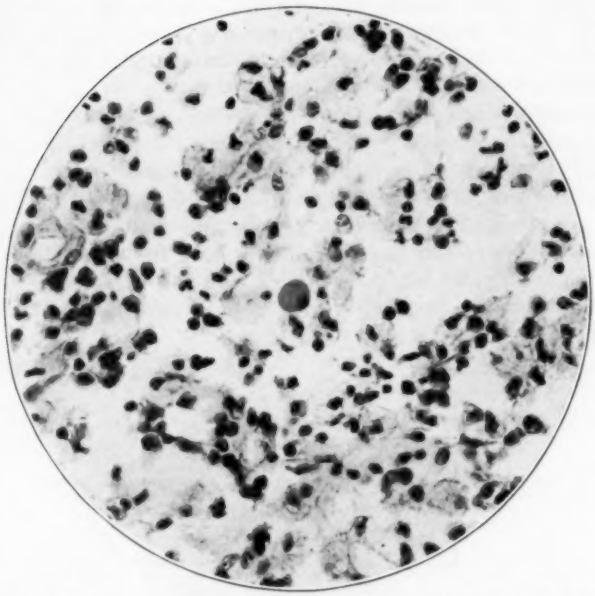

Fig. 2.—In addition to the innumerable plasma and Mikulicz cells, a typical colloid cell with its eccentric nucleus may be seen in the center. Hemotoxylin-eosin stain; × 250.

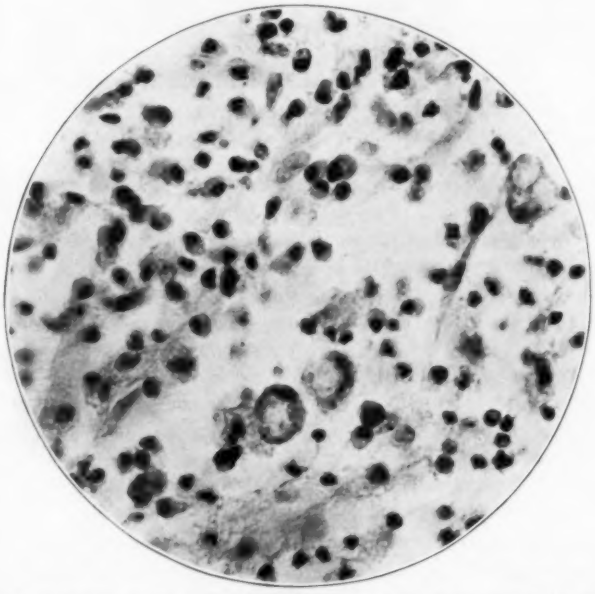

Fig. 3.—Two large hyaline cells in the stage of rupture are to be seen near the center. The bacilli of Frisch occur intracellularly and extracellularly in unusual frequency. Hemotoxylin-eosin stain; × 500.

and the presence of innumerable plasma cells in all stages of development and degeneration. Closer observation showed that the infiltration was also composed of Mikulicz cells, colloid or hyaline cells, endothelial cells, lymphocytes, polymorphonuclears and a few Russell fuchsin bodies.

While the tissue was extremely vascular and the lymphatic spaces noticeably dilated, perivascular infiltration was not a characteristic feature because of the chronicity of the process and the innumerable cells present.

Countless numbers of Milkulicz cells were scattered profusely throughout the tissue. These large, pale, swollen cells showed little or no tendency to stain with eosin, and had a protoplasm foamy or dropsical in appearance, which in many instances contained a variable number of Frisch bacilli. These bacilli were short, the size being about 2 by 5 microns. They were enclosed in a gelatinous capsule, but this was less readily apparent when they were viewed in the tissue. The bacilli occurred not only in the protoplasm of the Mikulicz cell, but free in the lymph spaces.

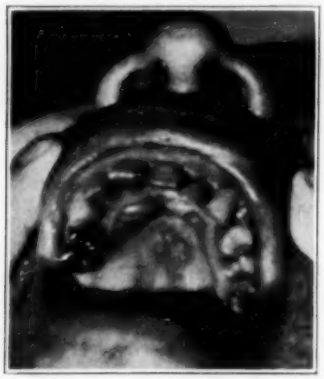

Fig. 4.—Scleromatous process on the hard palate. There were no nasal lesions.

The colloid type of cell with its compressed nucleus pushed toward the periphery in the earlier stages of its development and, sometimes absent at the time of its rupture, was present but not in the same abundance as the Mikulicz cell.

Examples of the Russell fuchsin bodies, staining a yellowish or yellowish red with eosin were found free in the tissue singly and in groups up to eight.

The entire process seemed to be one of replacement, few of the original structures being present. Elastic fibers were entirely lacking. The chronicity of this case is brought out by the fact that it is only in the later stages that one finds such a thick collagenous growth of connective tissue.

A histopathologic comparison of this case with the one that I first reported brings out the fact that while the bacilli of Frisch within the tissue are more numerous, fewer are contained within the Mikulicz cells. The proportion of plasma cells to the other cells was greater in the earlier case.

Treatment.—Roentgen treatment was given by Dr. Robert Newell of the department of radiology, Stanford University. Deep roentgen therapy at an effective wave length, 0.17 angstrom unit (moderately hard x-ray—150 or 100 r), was given alternately to each side of the neck and face daily for twenty-four days.

Course.—On July 13, 1931, it was noted that the patient showed marked improvement and felt better in every way. He was now able to do light work. He was still hoarse, but there was no stridor. The pharynx appeared the same. In September, 1931, at the time of writing, the patient was apparently well, with the exception of hoarseness resulting from much destruction of tissue.

NOTE.—On March 24, 1932, the patient called at the clinic, presenting a recurrence of the condition of several days' duration. There was evidence of activity on the hard and soft palate and along the scars of the posterior pharynx. Roentgen treatments were instituted again the following week.

DISCUSSION

DR. H. J. TEMLETON: I saw a case almost identical with this one with Dr. Greenbaum in one of the Jewish hospitals in Philadelphia, but there was an atrophic sclerosing effect on the tip of the nose. At that time the diagnosis of tuberculosis came into consideration, but rhinoscleroma was finally proved.

DR. ESTEBAN REYES: In this case of rhinoscleroma the tumor involves the hard palate and the posterior pharyngeal wall. This is a rare localization, excepting in cases seen in San Salvador. The external nasal lesions are not more common there. With this distribution it is important to differentiate between leishmaniasis and rhinoscleroma.

DR. H. MORROW: How many have you seen down there?

DR. ESTEBAN REYES: I have seen about two hundred or three hundred cases in San Salvador. This patient came from the district where the condition is endemic.

DR. M. J.-R. MAYNARD: I think that the interesting part of Dr. Reyes' statement is that the men who work largely with indigo show this condition.

DR. ESTEBAN REYES: No, it is not indigo, but a deep blue aniline dye. Rhinoscleroma frequently develops in workers in that industry. Some of us believe that the dye contains the causative organism.

DR. S. C. WAY: The slides show the pathologic changes characteristic of this disease. There is considerable fibrosis, innumerable plasma cells and Mikulicz cells. Of course, these cells alone do not make a diagnosis of scleroma, but in addition we were able to obtain the bacillus of Frisch.

DR. G. D. W. CULVER: Have you ever seen carcinoma arise from this condition?

DR. E. REYES: No, I have never seen it.

ONYCHOLYSIS AND ONYCHOMADESIS

REPORT OF A CASE OF EACH, WITH A REVIEW OF THE LITERATURE

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NEW HAVEN, CONN.

In spite of much literature, the nails remain one of the subjects about which there is very little knowledge. Histopathologic studies are manifestly difficult, and the etiology of many lesions remains as obscure now as it ever has been. It is known, of course, that fungi may attack the nails and cause lesions of various forms, that some of the generalized dermatoses are accompanied by changes in the nails, and that there are a number of congenital anomalies of the finger-nails and toe-nails. Beyond this very little is known. Among the lesions most infrequently seen is the group that presents a partial or total loss of the nails without any previous inflammatory process to which this loss may be ascribed. Various causes have been suggested for this condition, but there is no unanimity of opinion on the subject.

The cases described in the literature can be divided into two groups. This division is based on the mode of onset and the other clinical features that seem to show a sharp differentiation in the part of the nail affected. This communication is a report of two cases, one of each group, together with a brief review of some of the previous publications on the subject.

ONYCHOLYSIS

The first group embraces cases in which there is only a partial separation of the nails from the nail bed and to which Heller [1] has given the name onycholysis. In these cases the progress of the disease is usually gradual, beginning at the free border of the nail and reaching a terminal stage when either part or the whole nail is separated from the nail bed. The space between the nail and the nail bed is filled with small, fine, easily removable, horny scales and particles of dirt. In well cared for nails, this space transmits light, so that the loosened portion of the nail can, by its yellowish-white color, be sharply differentiated from the normal rose-colored nail. The yellowish-white color is not unlike the appearance of the free border of normal nails. The surface of the nails is smooth, and the paronychium is normal in appearance.

1. Heller: Die Krankheiten der Nägel, in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1927, vol. 8, pt. 2, p. 113.

The entire progress of the disease is painless. It is characteristic of the condition that the nail remains in place or is broken off or cut off. The nails may remain in this condition, or regression may take place. Recurrent attacks may occur. In some of the cases the nails appear to have stopped growing. Heller [1] believed that the name onycholysis should be reserved for cases showing no symptoms that could possibly be construed as indicative of a preceding inflammatory process, and he stated that the number of undoubted cases was very small.

Friedman [2] gave the condition the name onycholysis partialis semilunaris because the condition progressed in a convex line toward the matrix, giving it a semilunar appearance. He admitted more cases to this category than Heller and described the condition as follows: "A high grade erythema of the nail bed appears first and may be accompanied by bleeding points or even subungual exudation of blood, with pain that may be severe enough to interfere with grasping. In about one week this disappears and loosening begins, which, however, never reaches the extent of the erythema of the nail bed." He felt that the loosening was always secondary to an erythemato-exudative process, although this was not seen in all cases. In one of his case reports he described the loosened zone, then a narrow bronze-colored zone, which in turn was surrounded by a white zone and last by an ill defined red zone. Dubreuilh and Frèche [3] mentioned linear ecchymoses in one case.

Fournier [4] attributed the condition to syphilis of the nails, as did Unna,[5] but Radcliffe Crocker [6] considered it a nonsyphilitic process and believed that it appeared especially in disturbances of the nerves. Darier [7] believed that it was syphilitic in origin, although he stated that it occurred in many diseases of the nervous system. Oppenheim [8] reported three cases in laundresses as an occupational disease and one case following a burn. At the meeting of the Section on Dermatology of the American Medical Association in 1931, Templeton [9] reported

2. Friedman, Martin: Ueber einige seltene Nagelerkrankungen, Arch. f. Dermat. u. Syph. **135**:161, 1921.

3. Dubreuilh, W., and Frèche, D.: Décollement des ongles, J. de méd. de Bordeaux **31**:445 (June); 461 (July) 1901.

4. Fournier, J. A.: Traité de la syphilis, Paris, Rueff et Cie, 1899, vol. 1, p 394.

5. Unna, P. G.: Anatomische physiologische Vorstudien zu einer künftigen Onychopathologie, Arch. f. Dermat. u. Syph. **13**:3, 1881.

6. Crocker, H. R.: Diseases of the Skin, ed. 3, Philadelphia, P. Blakiston's Son & Company, 1907, vol. 2, p. 1252.

7. Darier: Précis de dermatologie, ed. 4, Paris, Masson & Cie, 1928, p. 578.

8. Oppenheim, M.: Ueber eine eigene Art der Nagelablösung bei Wäscherinnen, Wien. Arb. a. d. Geb. d. soz. Med. **1**:127, 1910; Onycholysis partialis e combustione, Dermat. Ztschr. **19**:464, 1912.

9. Templeton, H. J.: Onycholysis: An Industrial Dermatosis, J. A. M. A. **97**:1950 (Dec. 26) 1931.

the cases of five patients in whom the condition showed a definite connection with their occupation. All these patients worked as bottle washers, and their hands were constantly immersed in water. In addition, there was the added factor of trauma in picking labels off the bottles with their finger-nails. The condition cleared up promptly on cessation of work. Arzt and Hausmann [10] reported the occurrence of the condition in a brother and sister of consanguineous parentage. These patients also had hydroa vacciniforme and porphyrinuria and showed skeletal and hair anomalies.

It is evident from the descriptions of these cases and from the part of the nail attacked and the mode of progress of the disorder that it is a disease of the nail plate itself or of the nail bed. If any cause can be ascribed, it must be one that does not operate on the matrix. The cases in which there is interference with the normal production of the nail by the matrix can easily be distinguished clinically and form the second group of cases.

ONYCHOMADESIS

The second is that group of cases in which, with absolutely no premonitory symptoms, one or more nails suddenly lose all connection with the nail bed, matrix and nail grooves. The surface of the nail itself is unchanged, and the surrounding tissues are normal in appearance. The patient may notice that the entire nail has taken on the same yellowish-white color that the free border always has, and closer inspection proves that the nail is loose and easily and painlessly removable or falls by itself within a few days, or the nail or nails may be shed before the patient notices anything else. On top of the nail bed, when the nail has fallen off, can be found a more or less perfectly and completely formed nail.

Heller [11] stated that the number of cases that had been reported without any ascribable cause was so small that it was possible that the cause may have been overlooked; the phenomenon occurs in several general conditions that have been assumed to have been the indirect cause of the shedding of the nail. Early writers used the term onychoptosis, but, as Heller pointed out, ptosis implies the fall of an organ from one part of the body to another. He pointed out that Hippocrates used the term madesis to depict falling out, and he suggested that the condition be called onychomadesis.

Some of the earliest cases reported are of interest as they suggest possible causes. Many of these early cases occurred following intense

10. Arzt, L., and Hausmann, W.: Zur Kenntnis der Hydroa, Strahlentherapie **1**:444, 1920.

11. Heller (footnote 1, p. 111).

emotional strains or exposure to lightning. Kannegieser [12] reported the case of a man who lost the skin of the hands and feet, together with the nails, after having thought he saw the devil. Pater [13] also reported shedding of the skin of the hands together with the teeth and the nails. Rayer (cited by Franz [14]) saw a case in which the skin of the hands and the nails were shed like a pair of gloves. Because of the accompanying shedding of the skin, it is easy to believe that these authors overlooked a scarlatina preceding this occurrence.

Another interesting group of cases consists of those in which the loss of the nails is accompanied by a typical alopecia areata. Franz Arago,[15] in a work called "Le Tonerre," told of a ship's officer who was likely struck by lightning. The following day, while shaving, he noticed that the hair pulled out with no resistance. He had total alopecia with loss of his finger-nails, the toe-nails remaining unchanged. Cooper Todd [13] saw loss of hair and nails after lightning shock. Tyson [16] described the case of a man who was sleeping in the open and was awakened by a severe electrical storm. He had a total and permanent alopecia, together with loss of his great toe and thumb nails. Arnozan [17] reported a case of loss of the toe-nails and finger-nails together with an alopecia of the beard and of the second phalanges of the fingers. Foley's [18] case was one in which all the nails of both hands and feet were lost. In considering these cases, it is worthy of note that Sabouraud,[19] in his book on alopecia areata, devoted a few pages to lesions of the nails occurring in such cases, but he did not mention shedding of the nails. Heller also called attention to the fact that in spite of the terrific psychic and physical shocks to which millions of men were exposed during the World War, no observations of such lesions were recorded.

Shedding of the nails has been reported as occurring in cases of tabes dorsalis. However, the reported cases are few, and as this is a most striking manifestation, it can be assumed that it is an extremely rare occurrence. Most of the reported cases concern the toe-nails,

12. Kannegieser: Singularis effectus et notabile e terrore damnum, Acta physio-med. **7**:43, 1749.

13. Cited by Heller (footnote 1, p. 111).

14. Franz, F. A.: De signis ex unguibus, Inaug. Dis., Berlin, 1840.

15. Arago, Franz: Notices scientifiques in oeuvres, Paris, Gide et J. Baudry, 1854, vol. 4, p. 376.

16. Tyson: Case presentation before the Clinical Society of London, Feb. 12, 1886; Lancet **1**:351, 1886.

17. Arnozan, M.: Chute spontanée des ongles aux mains et aux pieds: Pelade de la barbe et des secondes phalanges, J. de méd. de Bordeaux **17**:608 (July) 1888.

18. Foley: The Morbid Changes and Surgery of the Nail, Boston M. & S. J. **117**:301 (Sept. 29) 1887.

19. Sabouraud, R.: Pelades et alopécies en aires, Paris, Masson & Cie, 1929.

involvement of the finger-nails being much rarer. Pitres, working in a large clinic, saw only three cases in two years. Heller [20] stated that the collected cases of Mader, Pouget, Joffroy, Pitres, Rocques, Domecq-Turon, Boineau and Militchevitch total only sixteen. The nail most often affected was that of the great toe. One nail alone or several may be involved. The phenomenon may be unilateral or bilateral. It may occur once only, or may be repeated with more or less rapidity. In one case reported by Domecq-Turon [21] the nails were exfoliated and replaced ten times in three years, and Boineau [22] described a case in which the nails were shed three times. Boineau also described a case of simultaneous loss of the nails and teeth accompanied by neuralgia. Loss of the nails may be accompanied by pain, as in the case of Boineau, by hyperesthesia, as reported by Militchevitch,[23] or by paresthesia, as reported by Pitres,[24] but anesthesia is more frequent than hyperesthesia or paresthesia. One of Mader's [25] patients found his toenails in his stockings without being at all aware of losing them, and Boineau emphasized the fact that the loss of the nails was entirely painless. That this condition is neurotrophic is strongly suggested by the fact that in the reported cases the most common tabetic symptom is the lancinating pain. This is also suggested by the histopathologic studies of Dejerine,[26] who found changes in the nerves while the ganglions were intact; those of Leloir,[27] who followed the inflammatory process as far as the nerve endings, and those of Gumpertz,[28] who showed that in tabes changes are demonstrable in the peripheral nerves. In this connection, it is worthy of note that loss of the nails has been reported in multiple sclerosis by Joffroy,[29] and following concussion of the brain by Heller.[30]

Of the changes in the nails induced primarily by diabetes mellitus, one of the most striking and important is loss of one or more nails.

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20. Heller (footnote 1, p. 338).

21. Domecq-Turon: De la chute et de la dystrophie des ongles chez les ataxiques, Thèse pour le doctorat de Bordeaux, 1881, no. 15.

22. Boineau: De la chute des ongles, de la chute des dentes et des névralgiques dans l'ataxie locomotrice et dans le diabète, Thèse de Paris, 1883.

23. Militchevitch, Demetre: Considerations sur les troubles trophiques des ongles dans quelques maladies des centres nerveux, Thèse de Paris, 1883.

24. Pitres: Progrès méd. **10**:139, 1882.

25. Mader: Tropische Affection der Zehenägel bei chronischer Myelitis (Tabes), Ber. d. k. k. Krankenanstalt Rudolph Stiftung in Wien, 1881, p. 314.

26. Dejerine, cited by Heller (footnote 1, p. 339).

27. Leloir: Affections cutanées d'origine nerveuses, Thèse de Paris, 1881.

28. Gumpertz, K.: Hautnervenbefunde bei Tabes, Ztschr. f. klin. Med. **35**:36, 1898.

29. Joffroy, Alex: Chute spontanée de l'ongle des gros orteils chez un malade non ataxique, Union méd. **34**:210 (Aug.) 1882.

30. Heller (footnote 1, p. 345).

It is not a common occurrence, but several cases have been recorded. Shoemaker [31] saw loss of both great toe-nails as the first symptom of diabetes in a 60 year old man. Follet [32] reported a case in a 26 year old woman. Heller [33] mentioned three cases, but one of these was not certainly due to diabetes as there was added the complicating factor of traumatism. The two cases reported by Auché [34] were not typical, as in each case there was evidence of subungual hemorrhages.

Among the intoxications, loss of the nails occurs in arsenic poisoning. Perhaps the earliest case, which Heller [35] credited to Saillant (he gave no reference, however), is that of Karl II. It was reported that in 1384 an attempt was made to poison him with arsenic. His hair and nails fell out, and grew in again following recovery from the intoxication. Heller also quoted Saillant as reporting that Caesar Borgia lost his hair and nails after having been unsuccessfully poisoned ten times. It is probable that arsenic was used at least one of those times. Rosenthal [36] reported a case in which three finger-nails were lost. The patient had been taking arsenic in the form of pills and solution of potassium arsenite. Lewin [37] did not mention any changes in the nails in acute arsenic poisoning, but in chronic poisoning he mentioned, among other symptoms, loss of the nails. In their description of the cutaneous lesions due to arsenic in the Manchester beer poisonings, Brooke and Roberts [38] stated that the nails may be thrown off in their entirety. Eulenberg [35] listed loss of the finger-nails due to chronic arsenic poisoning as an occupational disease, and Oppenheim [39] quoted Hellman as stating that a 3 per cent watery solution of arsenic trioxide used in preparing fly paper caused detachment of the nails. Strangely, however, loss of the nails has not been reported in the literature on exanthems caused by arsphenamine, although various other changes in the nails have been found. Wise and Sulzberger [40] have seen one case of exfoliative dermatitis due to arsphenamine in which the nails and hair were shed.

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31. Shoemaker, J. V.: Diseases of the Nails, J. Cutan. Dis. **8**:334, 1890.

32. Follet: Chute des ongles dans le diabète sucré, Gaz. hebd. de méd., Paris **11**:66, 1874.

33. Heller (footnote 1, p. 298).

34. Auché, B.: De la chute spontanée des ongles chez les diabétiques, J. de méd. de Bordeaux **20**:241 (Jan.) 1891.

35. Heller (footnote 1, p. 369).

36. Rosenthal, O.: Ueber typische und atypische Psoriases, Second Internat. Dermat. Kong., Vienna, 1892; cited by Heller (footnote 1, p. 362).

37. Lewin, L.: Lehrbuch der Toxikologie, ed. 2, Berlin, Urban & Schwarzenberg, 1897, p. 78.

38. Brooke and Roberts: The Action of Arsenic on the Skin as Observed in the Recent Epidemic of Arsenical Beer Poisoning, Brit. J. Dermat. **13**:121 (April) 1901.

39. Oppenheim, M.: M. Press & Circ. **169**:87 (July 30) 1924.

40. Wise and Sulzberger: Personal communication to the author.

There have been reports of loss of one or more nails following freezing of the fingers in Raynaud's disease, but although the process may not have been active at the time the nails were shed, the previous inflammation that was obviously the cause of the loss of the nails rules these cases out of the group under consideration.

There is a marked and obvious difference between such cases and cases of onycholysis. The separation of the nails at the matrix, the new nail being formed in some cases and not in others, suggests a temporary or permanent cessation of the reproductive function of the cells of the matrix in the latter group.

REPORT OF CASES

Case 1.—A man, aged 20, was first seen about two years after the onset of the disorder. He stated that at the time of onset he was a predental student and was working his way through college by selling books. He noticed first a sudden loss of hair in the right occipital region. The hair fell or was easily pulled out, and in a few days left a perfectly smooth, hairless area. About six months later the hair began to grow in again, and in six months he had a perfectly normal growth of hair. At the time that the hair began to fall out, he noticed that his finger-nails were dull and lusterless. After six months he took some pills prescribed by a physician, and about one month later began to notice improvement. The nails remained normal for about three months, when they again became lusterless, and the patient noticed the appearance of longitudinal ridges on them. Shortly after this he noticed that the nails began to separate from the nail beds. This separation was slow, progressively working down toward the lunula, and still seemed to be progressing. About six months after the onset of the condition on the hands, a similar condition appeared on some of the toe-nails. There was no history of any rash on the skin. There was no history of internal medication preceding the onset or any occupational exposure to arsenic. The patient was not aware of having or having had any constitutional disease. The entire process had been painless, and he had noticed no signs of inflammation about the nails.

Physical Examination.—General physical examination, made by Dr. Dayton of the Yale Medical School, showed no abnormalities except the condition of the nails.

Nails.—The nails affected were all the finger-nails and the first, second and third toe-nails on each foot. The finger-nails were short, being broken off with irregular edges, and the free edges, which were only about from one fourth to one third of the normal distance from the lunula, appeared to be lifted away from the nail beds. In most of the nails the condition extended as far as the nail could be seen, but on the left third finger the condition ended about 2 mm. from the ungual fold. The lower part of this nail appeared pink and normally attached to the nail bed. The line of demarcation was roughly semilunar, following the line of the ungual fold, although this line was not regular but serrated. The surface of all finger-nails presented numerous closely set longitudinal striations, and except for the attached part mentioned was lusterless and clay-colored. A flat instrument could be passed between the free edges of the nails and the nail bed down to the point of attachment without causing any discomfort. The lateral nail grooves had disappeared, leaving a smooth surface, and what was originally the nail bed was covered with a thin layer of horny material with an irregular outline and surface contour, apparently a rudimentary nail. Except for the flattening out of the lateral nail grooves, the paronychium was unaltered.

Right Foot.—The nails affected were those of the first, second and third toes. The nails were thick and noticeably convex in both diameters, giving the appearance of onychogryphosis. On closer inspection it was seen that the nails were detached from the lateral nail grooves and with very little force could be lifted up, disclosing a horny mass underneath. The surface of the nails presented longitudinal striations and was dull and yellow. There was a beginning disappearance of the lateral nail grooves.

Left Foot.—The first toe-nail showed a similar appearance, with apparently early changes in the nails of the second and third toes.

Laboratory Findings.—All laboratory examinations, including urinalysis, Kahn and Wassermann tests, a blood count and a determination of the blood sugar, gave normal results. No arsenic was found in a twenty-four hour specimen of urine.

Fig. 1.—Onychomadesis. The nail of the left ring finger is free, but is still in place. All the other nails have been shed, and there is a partially formed new nail on each finger.

CASE 2.—A man, aged 58, a riding master, was referred for treatment of syphilitic laryngitis. General examination revealed no abnormalities except a positive test for sugar and a trace of albumin in the urine. On questioning it was ascertained that the patient had previously been under treatment for diabetes.

He was given an intramuscular injection of 0.2 Gm. of bismuth potassium tartrate and 15 drops of a saturated solution of potassium iodide three times a day after meals. Because of pain following this injection, the bismuth was discontinued, but at his next visit on May 19, 1929, he received 0.3 Gm. of neoarsphenamine intravenously. He then received 0.45 Gm. of neoarsphenamine on May 22, followed by five injections of 0.6 Gm. each of neoarsphenamine, the last being given on June 19. On June 24, he was given mercury with chalk, 1 grain (0.06 Gm.),

three times a day. At this time his urine showed no sugar or albumin, but the finger-nails, which up to this time had been perfectly normal, showed their first changes.

The thumb nails and those of the first two fingers of each hand were falling. The entire nail showed a smooth surface, but had lost its luster and appeared to be completely separated from both the matrix and the nail bed. On the fingers, where the nails had fallen off, was a well formed new nail extending about half of its normal length. These new nails grew out rapidly, forming nails that were perfectly normal in appearance.

Subsequent to this the patient received eight intramuscular injections of bismuth potassium tartrate, 0.1 Gm. each, followed by eight intravenous injections of neoarsphenamine, the first being 0.45 Gm., and the following ones 0.6 Gm. This treatment was followed by another series of injections of bismuth, consisting of eight injections of 0.1 Gm. each. During this treatment there was no recurrence of the abnormalities of the nails, nor has there been any since.

Fig. 2.—Onycholysis. The left hand, showing the nails, which have been loosened at the free borders, but are still attached at the matrix; they are broken off and have a ragged edge.

COMMENT

Concerning case 1 very little can be said. It is a quite typical example of the form of separation of the nails that has been called onycholysis. It has been well described, but there is little definite knowledge as to its etiology. The two causes that have been most frequently advanced seem to be ruled out in this case. There is nothing in the history or in the examination to suggest intoxication of any sort as a cause, and the occurrence of the condition on the toes as well as on the fingers is conclusive evidence that the condition is not an occupational one. The only suggestive fact is the occurrence simultaneously with an alopecia areata. While this suggests that it is a trophic disorder, it does not give the ultimate cause.

In case 2 four of the causes previously reported as causing complete loss of one or more nails must be considered. These are syphilis and tabes, nervous shock, arsenic intoxication and diabetes.

The literature on syphilis and on diseases of the nails contains numerous descriptions of lesions of the nails, but all of these describe lesions of the type that might be classed as dystrophies. None of them give the picture of a sudden temporary cessation of the normal function of the nail matrix. This is true of late syphilis as well as of early syphilis, except for the fact that loss of the nails has been reported in tabes dorsalis. It seems, however, that loss of the nails is due not to the direct action of Spirochaeta pallida on them, but to its action on the nerves. In other words, the symptom is not a specific one, but one that can be elicited by any cause that interferes with the trophic function of the nervous system. In the case reported in this communication there are no signs of involvement of the nervous system, and it would seem impossible that the spirochetes could single out almost simultaneously the peripheral nerves that govern the trophism of each and every finger-nail and those nerves only.

It cannot be denied that the realization that one has syphilis would doubtless be a profound shock to any one, but this particular patient did not appear to be upset when told what was the matter with him. Sabouraud does not mention shedding of the nails as a concomitant of alopecia areata. Nevertheless, some of the cases cited in the foregoing historical review appear to be descriptions of typical cases of alopecia areata following severe nervous shock and accompanied by loss of one or more nails. However, the available literature does not afford any reports of shedding of the nails alone following shock, and this case presented no loss of hair in any region.

Arsenic intoxication must be considered, because in case 2 there was a definite and known administration of arsenic. Strangely the reported cases of loss of the nails following internal administration of arsenic are all those in which the drug administered was one of the inorganic compounds of arsenic. Heller does not mention loss of the nails as following the administration of arsphenamine or its related compounds. Another factor that argues strongly against arsenic as the causative factor in this case is the element of time. The first dose of neoarsphenamine was given on a date antedating the first recognizable symptoms in the nails by exactly thirty-six days. Experiments have been made to determine the rate of growth of the nails, and Berthold's [41] show an average time of 124 days. Dufour [42] agreed

41. Berthold, A. A.: Beobachtungen über das quantitative Verhältniss der Nagel- und Haarbildung beim Menschen, Göttingen, Dieterich, 1850.

42. Dufour, L.: De la vitesse de l'accroissement des ongles, Bull. Soc. vaudoise d. sc. nat. **11**:183, 1872.

with this figure, and Pradier [43] gave the time as 106.5 days. Taking an average figure from these three gives 118 days as the time required for the growth of a nail to its full length. It will be noted that at the first onset of symptoms in case 2, or rather at the time the nails were shed, the new nails were approximately half grown. If the foregoing figures on the rate of growth of the nails can be accepted, it becomes apparent that the causative factor was operative about sixty days previous to the actual fall of the nails. It is definitely known that the administration of arsenic began thirty-six days before that time. Of course, the exact time when the cause was active is not susceptible to exact determination, yet even allowing for a great error in the foregoing figure (sixty days) it is evident that the interruption in the normal formation of the nails occurred previous to the first administration of arsenic, and it must be discarded as a possible cause. In addition to this fact, one must note that the patient received a second series of injections of the same medication without a recurrence of the symptoms.

This leaves diabetes as the only remaining possible cause apparent in this patient. That diabetes can cause such a phenomenon is attested to by the previously reported cases, and the diabetes was not an accidental finding or a temporary condition as the patient was known to have it. It is also an accepted fact that diabetes can affect the nervous system, giving rise to various trophic disorders. To fix on diabetes as the cause, it must be assumed that about sixty days before the loss of the nails the patient had a temporary and extremely mild diabetic peripheral neuritis. The neuritis must have been severe enough to cause interference with the normal trophism of the matrices of the nails, but not severe enough to cause any other symptoms. In view of the fact that the patient had diabetes in a very mild form and was sugar-free most of the time he was under observation, it must be admitted that the foregoing possibility is quite remote.

It must be admitted that neither of the cases reported gives any clue as to the cause.

SUMMARY

1. Separation of the nails from the nail bed and matrix without previous local pathologic changes is an unusual occurrence.

2. The reported cases can be separated into two groups: one in which the process begins at the free border of the nails and is usually not complete; the other in which the process apparently begins at the matrix and is usually complete.

43. Pradier, P.: Note sur la reproduction des ongles, Gaz. d. hôp. **34**:147, 1861.

3. Various causes have been ascribed to the condition.

4. It seems probable that the pathologic process is one of the nail bed in one case and of the matrix in the other, the abnormality of the nail plate being only the visible evidence of this process.

5. Two cases are reported, one of each group.

6. The cause could not be ascertained definitely in either case.

41 Trumbull Street.

TURBAN TUMOR, OR SWEAT GLAND CARCINOMA

SO-CALLED ENDOTHELIOMA OF THE SCALP; REPORT OF A CASE ILLUSTRATING ITS EPITHELIAL STRUCTURE

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AND

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The peculiar tumor of the skin of the scalp often alluded to as the "turban tumor," so aptly described in the report of one of Spiegler's cases and frequently represented in the earlier textbooks on dermatology as "endothelioma capitis," is so striking that it leaves an unforgettable clinical picture in one's mind. The distribution and color of the tumors have been appropriately likened to a "wreath of tomatoes" (fig. 1). Spiegler,[1] who collected five previously reported cases of this disease, described the tumors as endotheliomas, and the cases reported earlier by Baker, Kaposi and Oro[2] were described as cases of sarcoma. The growths in the cases of Baker and Oro were not typical examples of turban tumors in that the tumors grew rapidly following injury. Both of the cases reported by Barrett[3] and Cohn[4] (included in Spiegler's collection) were typical examples, their illustrations being just as striking as Spiegler's. Both authors speak of the "epithelioid appearance of the pathological cells, arranged in a cylindroid manner."

These tumors of the scalp were first described as being of endothelial origin, at a time when some distinct neoplasms had been generally accepted as endotheliomas; later, after a more critical study, this origin was denied. Fick[5] emphatically asserted that there is no such entity as "endothelioma" as applied to these tumors and roundly criticized the authors for using such a term. After an analysis of twenty-five cases,

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From the Steiner Cancer Clinic.

1. Spiegler: Arch. f. Dermat. u. Syph. **1**:163, 1899.
2. Radcliffe-Crocker, H.: Diseases of the Skin, ed. 3, Philadelphia, P. Blakiston's Son & Co., 1903, p. 1027.
3. Barrett, J. W.: Brit. M. J. **1**:272 (Feb. 6) 1892.
4. Cohn: Am. J. Cutan. Dis. **10**:393, 1892.
5. Fick: Am. J. Cutan. Dis. **50**:444, 1912.

most of which correspond to the turban tumors of the scalp, Friboes [6] stated the belief that with few exceptions all of these cases represent examples of a peculiar type of slowly growing epithelial tumor. Ewing,[7] MacCallum [8] and others inclined to agree with the attitude assumed by Friboes.

The following report of a case well illustrates the distinct epithelial nature of the so-called "endothelioma of the scalp."

Fig. 1.—Photograph of patient with carcinoma of the sweat glands, illustrating the "turban" effect.

REPORT OF A CASE

History.—J. M. B., a white American housewife, aged 74, applied to the Steiner Cancer Clinic because of tumors of the scalp. The family history was irrelevant.

6. Friboes: Beiträge zur Klinik und Histopathologie des gautartigen Hautepitheliums, Berlin, S. Karger, 1912; quoted by Wise, F.: Am. J. M. Sc. **157**: 236 (Feb.) 1919.

7. Ewing, J.: Neoplastic Diseases, ed. 3, Philadelphia, W. B. Saunders Company, 1928, p. 328.

8. MacCallum, W. G.: A Textbook of Pathology, Philadelphia, W. B. Saunders, Company, 1919, p. 928.

The patient had had nine normal pregnancies and an uneventful menopause at 40 years of age. She had lost a little in weight but had had no serious illness in the past two years.

For the past forty years she had noticed successive crops of tumors growing on her scalp. All of the lesions (she had counted 172 two years prior to admission to the hospital) began on apparently normal skin as small pink tumors which grew slowly, producing no pain or discomfort. As they grew larger the color became darker, and they bled easily on injury. None of the tumors had disappeared spontaneously. The patient had sought medical advice, but she was never able to obtain a satisfactory diagnosis and so had refused operative removal.

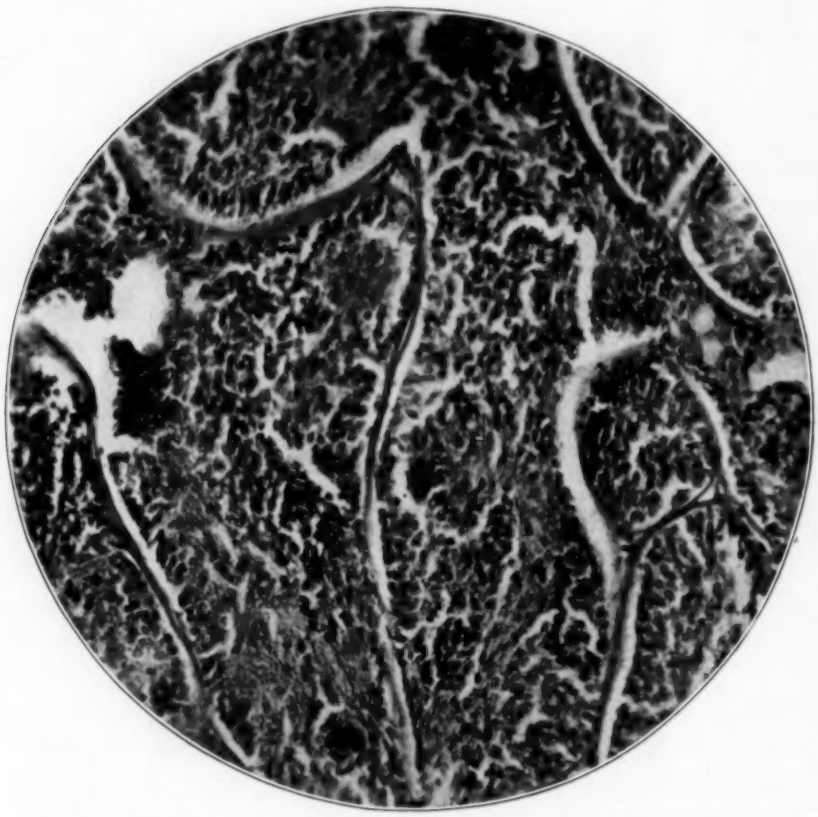

Fig. 2.—Photomicrograph showing carcinoma of the sweat glands. The pathologic section illustrates the acini-like arrangement of the cells.

Examination.—On physical examination no abnormality (except that of beginning senility) other than the tumors of the scalp was discovered. Almost the entire scalp, especially the front part, was covered with smooth, firm tumors (fig. 1) of various sizes and ranging from light pink to dark red in color. The largest tumor measured 4 cm. in diameter and was raised 1.5 cm. from the scalp; the smallest was hardly larger than a split pea. The general appearance could have been appropriately likened to that of a wreath of tomatoes, as the large tumors had

the puckered umbilication in the center, the flattened appearance and the smooth shiny red color typical of a ripe tomato. Some of the larger tumors were lobulated, appearing as though they were made up of a number of smaller tumors. The intermediate tumors were full and globular. The red or pink color was imparted to the tumors by the presence of a large number of intertwined blood vessels in the tightly drawn skin. There was no hair on any of the tumors. Some of the smaller tumors encroached on the forehead, and there were a number of slightly raised erythematous tumefactions, with depressed centers, about the size of the nail of the little finger. A similar lesion was noted on the back between the scapulas. None of the lesions were ulcerated.

Pathologic Report.—Two of the tumors of the scalp and the lesion on the back were removed for pathologic examination. All of the lesions had the same pathologic make-up. Immediately under an apparently normal epithelium there were masses of alveoli filled with hyperchromatic spindle and cubical cells, somewhat resembling the cells surrounding the hair shafts and hair follicles. In a few areas there were small, rounded collections of similar but smaller cells in an upright position, with central lumina, which strongly suggested the sweat glands of the skin. These isolated structures were found in a dense and hyaline stroma, and, with some difficulty various stages of transformation to the large cellular masses could be made out. Mitotic figures or hornification were not seen. There was little connective tissue, and it was limited to strands surrounding and separating the groups of cells (fig. 2). Pathologically, the tumor was a carcinoma, probably derived from the sweat glands, and was apparently relatively benign. The tumor may be likened to the lymphangio-endothelioma tuberosum multiplex of Kaposi, which is now conceded to be of epithelial origin.

COMMENT

The foregoing case is a typical example of the "turban tumor" or "endothelioma capitis" of Spiegler and others. Pathologically, the tumors are undoubtedly of epithelial origin, probably originating from the epithelium of the sweat glands. We believe that these tumors should not be classified as sarcomas or endotheliomas, but should be considered as peculiar, slowly growing carcinomas of a low grade of malignancy.

TINEA BARBAE OF THE UPPER LIP

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Previous records that describe the fungal infections of the beard areas show that beard fungi are usually restricted to the chin. In synopses of the literature on dermatophytes published in 1922 [1] and in 1930 [2] the illustrations representing the clinical appearance of tinea barbae show the infections restricted to the lower part of the face.

In 1931, Williams [3] published a paper describing a case of tinea barbae (sycosis parasitaria) involving the upper lip, in which he states, "The involvement of the upper lip . . . is so unusual as to be a medical curiosity." Before we decide whether or not tinea barbae of the upper lip is as rare as has been supposed, it is desirable that more records of the regional distribution of the fungi causing ringworm of the beard be obtained.

TINEA BARBAE OF THE UPPER LIP DUE TO TRICHOPHYTON GYPSEUM, BODIN

Clinical Appearance of the Infected Face.—Mr. K., a farmer, aged 43, was admitted to the Winnipeg General Hospital in January, 1931, suffering from acute inflammation of the upper lip and chin. Three weeks later the disease had yielded to treatment, and the patient was discharged from the hospital.

When the patient first presented himself, the upper lip in particular and, to a less extent, other parts of the beard area were greatly swollen (see illustration). Pus was freely exuding from some follicles, while others were occupied by pustules, from the center of which stumps of hair protruded. The stumps of hair could be removed with ease, and they came away from the follicles with a yellow sheath of pus clinging to the shaft and bulb.

This work was made possible by a grant from the Banting Research Foundation.

1. Sartory, A.: Champignons parasites de l'homme et des animaux, Paris, E. Le Francois, 1922, p. 453.

2. Henrici, A. T.: Molds, Yeasts and Actinomycetes, New York, John Wiley & Sons, 1930, p. 142.

3. Williams, C. M.: Tinea Barbae Involving the Upper Lip and Accompanied by Dermatophytid, Arch. Dermat. & Syph. **23**:213 (Feb.) 1931.

Distribution of the Fungus in the Diseased Tissue.—1. Beard hairs from the pustules on the upper lip were pulled out, dehydrated and embedded in paraffin. Transverse sections about 10 microns thick were then cut with the microtome and stained with gentian violet.

In the diseased hair fungal hyphae had penetrated the medulla, the cortex and the cuticle, and were also present outside the cuticle.

2. Infected beard hairs and their adherent follicular sheaths were soaked for a few minutes in dilute caustic potash, and were then examined microscopically. It was found that for each hair both the hair itself and the follicular sheath in which it was enveloped were penetrated by branching fungal hyphae. The part of the hair that extended above the level of the follicle was unaffected.

When the tissue was left in caustic potash until the hair and skin were dissolved away, the hyphae appeared more clearly, and it could be seen that certain parts of the hyphae were divided into short segments which tended to become spherical. The chains of rounded segments resembled strings of beads.

From these two observations it is evident that the fungus occurs both inside and outside the diseased hairs, and that the hyphae tend to become shortly segmented to form chains of "spores." These two characters place the fungus among the ectothrix trichophytons.

Tinea barbae of the upper lip due to Trichophyton gypseum.

According to Sabouraud and most subsequent investigators, fungi of the ectothrix group are always of animal origin. As Mr. K. is a farmer, he may have contracted the disease from his own animals.

The Fungus in Artificial Culture Mediums.—The culture medium employed for growing the Trichophytons from the beard hairs was a modification of Sabouraud's medium manufactured by Difco. The constitution of this medium and the method for using it is explained by us in another paper.[4]

Hairs were removed from the upper lip and planted in hanging drops of the medium. After a day or two, the hyphae in some of the hairs gave rise to a mycelium which pushed out into the drop and also out of the medium into the air.

All of the mycelia were contaminated with bacteria from the pus adhering to the hairs, which were used as inocula, so that it became necessary to separate the fungus from the bacteria. This was accomplished by allowing the fungus to develop until hyphae had grown out of the medium into the air and then, with the help of a sterile needle, by transferring a pinhead mass of the aerial hyphae from the hanging drop to a flask containing culture medium.

4. Davidson, A. M.; Dowding, E. S., and Buller, A. H. R.: Hyphal Fusions in Dermatophytes, Canad. J. Research **6**:1 (Jan.) 1932.

When the fungus had been growing on Sabouraud's medium for a few weeks, it began to assume the characters of Trichophyton gypseum, both in the gross appearance of the cultures and in the appearance of the spores under the microscope.

To the naked eye, the culture was dead white, and as it enlarged it became star-shaped. After the first month its surface became plaster-like and minutely granular.

A portion of the aerial mycelium of a culture was pulled away with the help of a needle, and its spores were examined microscopically. The spores that were found at successive intervals of time were spindles, aleuriospores and chlamydospores. The spindles of T. gypseum are club-shaped, with rounded ends, are 20 microns long and 5 microns wide and possess two or three cross-walls. The aleuriospores are spherical or slightly elongated, with constriction at the point of attachment. They are about 4 microns in diameter. The chlamydospores are formed by the swelling of aerial hyphae at intervals along their length so as to give rise to chains of spherical nodules. They may attain a diameter of 14 microns.

The young cultures produce spindles only. As the medium progressively becomes exhausted, the spindles give place to aleuriospores, which in turn are succeeded by chlamydospores. When a portion of an old culture producing only chlamydospores is transferred to a fresh medium, it again produces spindles or aleuriospores.

Owing to the successive production of different spore forms, such fungi as T. gypseum must be closely studied for a long time before one can identify them with certainty.

Tinea Barbae of the Upper Lip Due to an Undetermined Fungus.—The records of the Winnipeg General Hospital show that Mr. L. was admitted four years before the present writing, suffering from acute inflammation of the upper lip and cheek. The infected areas were greatly swollen, and exuded pus. The infected tissue was not examined for fungi, but the clinical appearance of Mr. L. resembled that of Mr. K. We may therefore assume that Mr. L. was also suffering from fungal infection, although the fungus causing the disease was not identified, isolated or determined. If this assumption is correct, Mr. L.'s case is another example of fungal infection of the upper lip.

SHAVING AND THE DISTRIBUTION OF FUNGAL INFECTIONS ON THE FACE

A survey of the earlier literature on fungal diseases shows that tinea barbae in former years was restricted to the lower part of the face. It may also be noted that the patients with fungal infections of the chin who are pictured in the early records possessed moustaches. It is possible that the moustache protected the skin of the upper lip from infection. Today the shaving of the upper part of the face is much more usual than formerly. It may well be that the change of fashion in shaving is responsible for the occurrence of tinea barbae on the upper lip.

NAEVUS SEBACEUS (JADASSOHN)

REPORT OF FOUR CASES

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Naevus sebaceus of Jadassohn is a rather rare disorder. A survey of the available literature disclosed the reports of only thirty-five cases. Little reference to this subject was found in American dermatologic textbooks or periodicals. A report of four cases recently seen in the Klinik Arzt and a review of the literature were therefore thought to be of interest. These cases are not presented as the Balzer, Pringle or Hallopeau-Leredde types of sebaceous gland tumors, but as the fourth type first described by Jadassohn.[1]

REVIEW OF THE LITERATURE

The term, "naevus sebaceus," was first employed by Jadassohn in 1895 to describe new growths of nevoid character composed partly or entirely of sebaceous glands. Two cases were reported; in one a systematized nevus was present. Jadassohn described the structure of the sebaceous glands forming the tumors as being normal. He differentiated for the first time naevus sebaceus from adenoma sebaceum of Pringle, Balzer and Hallopeau.

In 1898, Oppenheimer-Maerklin [2] reported a third case with unilateral location on the face. He considered the growth to belong to the "organ nevi" sometimes originating from the sebaceous and sweat glands.

In 1899, Bandler [3] described two additional cases of naevus sebaceus with localization on the forehead. Attention was called to the normal histologic structure of the sebaceous glands and the confusion that had existed between Pringle's adenoma sebaceum and naevus sebaceus. He stated that Crocker [4] and Bock [5] had presented cases as Pringle's ade-

From the University of Vienna Dermatology and Syphilology Clinic. Director, Professor Leopold Arzt, Allgemeines Krankenhaus, Vienna, Austria.

1. Jadassohn, J.: Bermerkungen zur Histologie der systematisierten Naevi und über Talgdrüsen-Naevi, Arch. f. Dermat. u. Syph. **33**:355, 1895. Werner, A.: Zur Kenntnis der "systematisierten Naevi," ibid. **33**:341, 1895.

2. Oppenheimer-Maerklin, E.: Ein Fall von halbseitigen Talgdrüsennaevus, Inaugural Dissertation, Freiburg, 1898.

3. Bandler, V.: Zur Histologie des Naevus sebaceus, Arch. f. Dermat. u. Syph. **49**:95, 1899.

4. Crocker: Adenoma sebaceus, II. Intern. Cong. f. Dermat., Wien, 1892.

5. Bock, E.: Ueber ein Adenom der Talgdrüsen, Virchows Arch. f. path. Anat. **81**:503, 1880.

noma that were typical of Jadassohn's nevus. The similarity in the histologic signs that may exist between the disorders was given as the cause of the confusion.

In 1903, under the title, "adenoma sebaceum circumscriptum," Audry [6] described a unilateral new growth on the cheek. It consisted of a "plaque of conglomerate papules composed of enormous sebaceous glands." His observations corresponded with those of naevus sebaceus.

In 1910, Wolters [7] introduced the term "naevus epitheliomatosus sebaceus capitis" to describe a special type of naevus sebaceus occurring on the scalp. Four cases were reported. In each instance the disorder was present since birth, located on the parietal region and characterized by circumscribed, unilateral, yellow, hairless plaques with a smooth, uneven surface. Two of the patients were father and son. Wolters believed the tumor to be a congenital, benign new growth arising primarily from the sebaceous glands and secondarily from hair and hair follicles. Abnormalities of the sweat glands were also described.

The association of naevus sebaceus and other forms of epithelial proliferation (cornu cutaneum) was brought forth by Bergmann [8] and Gelbjerg-Hansen.[9]

Selisskey [10] described the development of a sebaceous gland nevus on the site of a vaccination scar. An irritation of a congenital sebaceous cell anlage was believed to be the basis for this growth.

Additional reports of cases of Jadassohn's naevus sebaceus are those of Buschke,[11] Gavazzeni,[12] Reitmann,[13] Benkman,[14] Saalfield,[15] Collett,[16]

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6. Audry, C.: De l'adénome sébacé circonscrit, Ann. de dermat. et syph. **4**: 563, 1903.

7. Wolters, M.: Ueber einen Fall von Naevus epitheliomatosus sebaceus capitis, Arch. f. Dermat. u. Syph. **101**:197, 1910.

8. Bergmann, A.: Zwei Fälle von Cornua Cutanea in systematisierten Naevi sebacei, Dermat. Wchnschr. **56**:427, 1913.

9. Gelbjerg-Hansen, G.: Ein Fall von Naevus sebaceus mit solitärem Hauthorn, Dermat. Ztschr. **46**:26, 1926.

10. Selisskey, A. B.: Zur Frage der Naevi sebacei, Venerol. i dermat. **6**:22, 1929.

11. Buschke, E.: Verhandl. d. Berl. dermat. Gesellsch., March 4, 1902; Zentralbl. f. Haut- u. Geschlechtskr. **5**:220, 1902.

12. Gavazzeni, G. A.: Talgdrüsen Hyperplasie und Epitheliom, Arch. f. Dermat. u. Syph. **92**:323, 1908.

13. Reitmann, K.: Zur Kenntnis der Talgdrüsen, Arch. f. Dermat. u. Syph. **99**:125, 1910.

14. Benkman, quoted by Ricker-Schwalbe: Die Geschwülste der Hautdrüsen, Berlin, S. Karger, 1914.

15. Saalfield: Verhandl. d. Berl. dermat. Gesellsch., Nov. 14, 1922; Zentralbl. f. Haut- u. Geschlechtskr. **7**:301, 1923.

16. Collett: Naevus sébacé développé sur le trajet d'une fente branchiale, Lyon méd. **132**:1005, 1923.

Frieboes,[17] Kumer,[18] Arzt and Kumer (two cases),[19] Biberstein,[20] Rothman,[21] Goldschlag,[22] Epstein,[23] Pintér,[24] Nadel,[25] Ostrowski,[26] Arata,[27] Leven,[28] Wirz,[29] Mijkerk [30] and Olson.[31]

REPORT OF CASES

CASE 1.—Miss G. S.,[32] aged 17, a Czechoslovakian, entered the Klinik Arzt with a history of tumors growing on the right cheek during the past five years. The disorder was not familial, and no subjective symptoms were present.

Examination revealed the face to be seborrheic and richly supplied with comedones. Located on the right malar region were three small groups of brownish-yellow, hempseed-sized, firm papules. The papules were umbilicated, and the centers showed dilated follicle mouths filled with adherent scales.

Histologic examination revealed that in the epidermis were widened and deep-seated follicle openings filled with horn and sebum. The follicle epithelium was thickened and showed degenerative changes in the form of poorly stained, swollen, vacuolated cells. The cutis contained numerous enlarged sebaceous glands in some of which were ducts opening directly into the follicle osteum. The basal cell layer of most of the sebaceous glands was absent, and the fatty degenerated sebaceous cells lay directly over the connective tissue membrane. Some sebaceous glands showed cystic degeneration, while in others there were areas of thickening

17. Friebos, W.: Naevus epitheliamotsus capitis, Dermat. Ztschr. **22**:313, 1915.

18. Kumer, L.: Verhandl. d. Wien. dermat. Gesellsch., March 20, 1924; Zentralbl. f. Haut- u. Geschlechtskr. **13**:40, 1924.

19. Arzt, L., and Kumer, L.: Ueber Drüsennaevi (zwei Fälle), Arch. f. Dermat. u. Syph. **148**:323, 1925.

20. Biberstein, H.: Talgdrüsen naevus und Epitheliom, Arch. f. Dermat. u. Syph. **147**:177, 1924.

21. Rothman, S.: Verhandl. d. ungar. dermat. Gesellsch., Budapest, Nov. 8, 1929; Zentralbl. f. Haut- u. Geschlechtskr. **34**:406, 1930.

22. Goldschlag: Verhandl. d. Lemberg. dermat. Gesellsch., Feb. 3, 1928; Zentralbl. f. Haut- u. Geschlechtskr. **27**:477, 1928.

23. Epstein, S.: Verhandl. d. Schles. dermat. Gesellsch., May 19, 1928; Zentralbl. f. Haut- u. Geschlechtskr. **29**:608, 1929.

24. Pintér, K.: Verhandl. d. ungar. dermat. Gesellsch., Budapest, Oct. 10, 1928; Zentralbl. f. Haut- u. Geschlechtskr. **29**:255, 1929.

25. Nadel: Verhandl. d. Lemberg. dermat. Gesellsch., Sept. 27, 1928; Zentralbl. f. Haut- u. Geschlechtskr. **30**:441, 1929.

26. Ostrowski, S.: Verhandl. d. Lemberg. dermat. Gesellsch., Feb. 14, 1929; Zentralbl. f. Haut- u. Geschlechtskr. **31**:162, 1929.

27. Arata, I.: Sebaceous Gland Naevus, Jap. J. Dermat. & Urol. **30**:103, 1930.

28. Leven: Systematisierter Naevus sebaceus, Dermat. Wchnschr. **91**:1440, 1930.

29. Wirz: Verhandl. d. Versamml. südwestdeutsch. Dermat., München, April 26, 1930; Zentralbl. f. Haut- u. Geschlechtskrankh. **34**:668, 1930.

30. Mijkerk, M.: Naevus sebaceous, Nederl. tijdschr. v. geneesk. **2**:3628, 1931.

31. Olson: Arch. Dermat. & Syph. **6**:21 (July) 1922.

32. Presented by Prof. Leopold Arzt before the Vienna Dermatologic Society, May 23, 1929.

and proliferation of the basal cell layer. Dilated capillaries surrounded by an inflammatory infiltrate of round cells were in the papillary layer of the cutis. About the dilated follicles and enlarged sebaceous glands were circumscribed, compact infiltrations of lymphocytes and plasma cells. The sweat glands were of the apocrine type and contained nucleated epithelial cells in their lumina. The collagen and elastica were normal.

A diagnosis of naevus sebaceus and apocrine sweat glands was made.

Case 2.—S. S.,[33] a German, aged 73, applied for treatment at the Klinik Arzt for the following complaint: A tumor had been present since birth on the right side of the face and scalp. Several months before he presented himself, a hard, round, pea-sized nodule had developed on its lower portion. The nodule gradually enlarged and ulcerated, and bled on the slightest trauma. No subjective symptoms were present. The lesion was not familial.

Fig. 1 (case 2).—Naevus sebaceus with malignant degeneration.

Examination of the right parietal and preauricular regions showed a sharply defined, elevated, brownish-yellow, linear plaque, 10 cm. in length and 3 cm. in width. The plaque was formed by firm papules ranging in size from that of a lentil to that of a split-pea. The lower third portion contained a quarter-sized, round, superficial ulcer covered by a brown, hemorrhagic crust. The base of the ulcer was bluish red and granulating; the walls were elevated, pearly and hard. No regional adenopathy was present.

Histologic examination revealed that the epidermis was slightly hyperkeratosic and showed dilated follicle openings filled with concentric layers of horn scales. Acanthosis was marked with downward proliferation of the basal cell layer of the surface epithelium in strands (basal cell epithelioma). The entire cutis was filled

33. Presented by Dr. August Matras before the Vienna Dermatologic Society, May 8, 1930.

with large sebaceous glands. The basal layer of cells of most of these glands was absent. The fatty degenerated sebaceous cells rested on the basal membrane. The sebaceous cells retained their nuclei throughout the glands. Areas of cystic degeneration were present, and a loose inflammatory infiltrate of round cells surrounded the tumor tissue. Clumps of pigment were in the upper and lower cutis layers. The hair, hair follicles, sweat glands and connective tissue were normal.

A diagnosis of naevus sebaceus and basal cell epithelioma arising from the surface epithelium was made.

CASE 3.—A. F.,[34] an Austrian, aged 66, presented himself at the Klinik Arzt for the removal of a growth on the head. The disorder had been present since birth and was not familial. No subjective symptoms were associated with the lesion.

Examination disclosed a quadrangular, yellow, furrowed plaque, 2 by 3 cm., on the left parietal scalp area. It was composed of firm papules ranging in size from that of a hempseed to that of a split-pea.

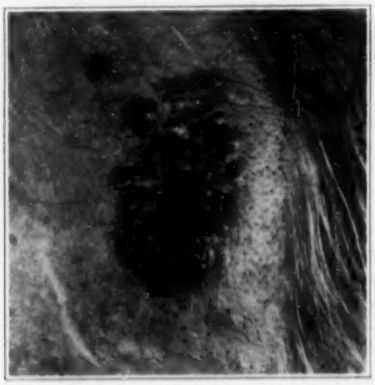

Fig. 2 (case 3).—Naevus sebaceus on the left side of the scalp, with biopsy wound in the lower portion.

Histologic examination revealed that the surface epithelium was thinned and contained widened follicle mouths filled with scales and sebum. In the papillary and subpapillary layers of the cutis there were many large sebaceous glands. Most of the sebaceous glands showed normal structure. Some gland ducts opened directly to the outside. The basal cell layer was fully developed, and toward the center of the alveolus the sebaceous cells showed homogeneization and loss of nucleus. Some of the glands, however, showed degeneration of the basal cell layer in the form of vacuolization and poor staining. A loose, perivascular, inflammatory infiltrate of small mononuclear cells surrounded the gland tumor. The connective tissue, sweat glands and follicular epithelium were normal.

A diagnosis of naevus sebaceus was made.

CASE 4.—K. M.,[35] a Czechoslovakian, aged 17, presented himself at the Klinik Arzt for the removal of tumors of the scalp and face. The lesions were congenital,

34. Presented by Dr. Anton Musger before the Vienna Dermatologic Society, Jan. 14, 1932.

35. Presented by Dr. August Matras before the Vienna Dermatologic Society, Dec. 10, 1931.

and had always been of the same relative size. There was no familial history of the disorder, and there were no associated subjective symptoms.

Examination disclosed on the right parietal area of the scalp a sharply defined, flat, yellowish-brown, linear tumor, 10 cm. in length and 3 cm. in width. The plaque was composed of small, hard papules. Its surface was smooth and furrowed and showed growth of hair. On the right preauricular region was a yellowish, quadrangular, flat tumor composed of lentil-sized papules; it measured 4 by 6 cm. Hair grew on two thirds of its surface.

Histologic examination showed in the epidermis widened follicle mouths filled with horn scales. The stratum granulosum was widened, and moderate acanthosis was present. Large sebaceous glands filled the papillary and subpapillary layers of the cutis. The basal layer of many sebaceous glands was missing, and the sebaceous cells lay directly over the basal membrane. Throughout these glands,

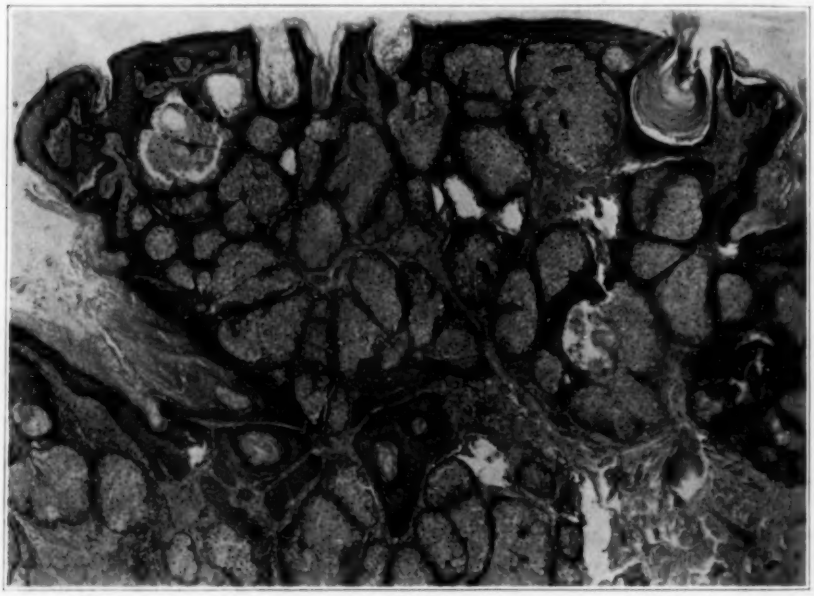

Fig. 3 (case 3).—Naevus sebaceus. Hematoxylin-eosin stain; low power magnification.

the sebaceous cells were uniformly nucleated. Areas of cystic degeneration were present. In the upper cutis there were dilated capillaries surrounded by a loose infiltrate of round cells. The sweat glands were of the apocrine type, containing nucleated epithelial cells and sweat in their lumina. Some of the sweat ducts showed cystic dilatation.

A diagnosis of naevus sebaceus and apocrine sweat glands was made.

COMMENT

The clinical diagnosis of naevus sebaceus may present difficulties. Linear arrangement and unilateral location may confuse it with naevus lateralis. Xanthoma may be ruled out only by biopsy. In the same case, Wolters [7] thought of leiomyoma cutis, while Jean considered naevus

verrucosus. Ostrowski [26] made a diagnosis of naevus pigmentosus hypertrophicus in a case of naevus sebaceus before microscopic examination

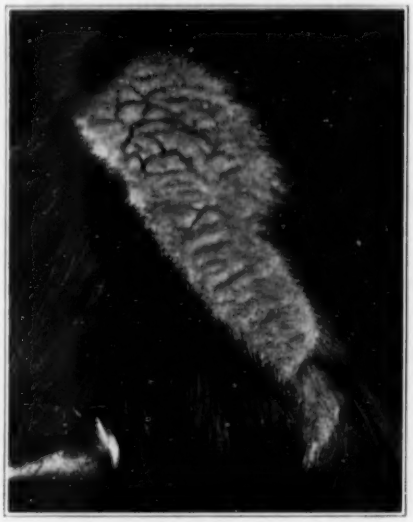

Fig. 4 (case 4).—Naevus sebaceus on the right parietal region.

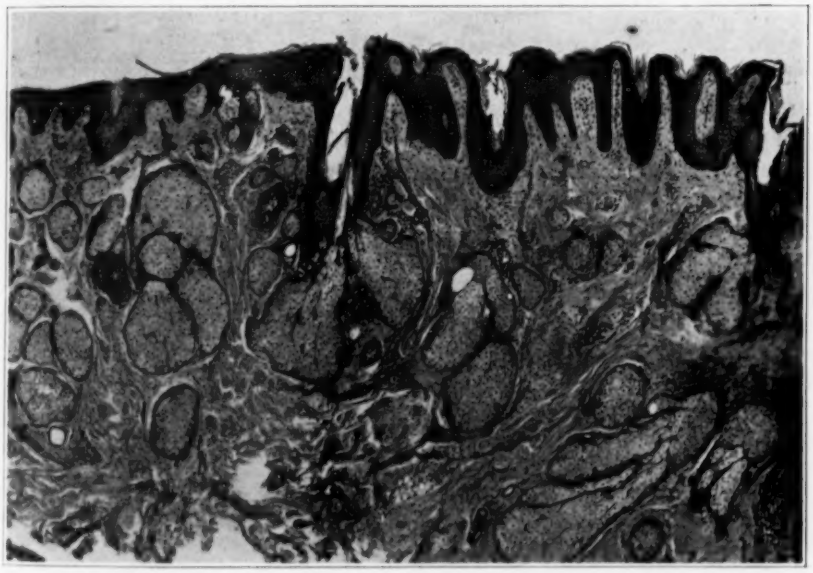

Fig. 5 (case 4).—Naevus sebaceus. Hematoxylin-eosin stain; low power magnification.

was made. The essential clinical characteristics of naevus sebaceus are as follows: There are usually circumscribed, flat, firm, yellow plaques with smooth, furrowed surfaces. The tumor is composed of small,

round papules. The location is commonly unilateral on the scalp or face, the favorite sites being the parietal, frontal and preauricular regions. There is usually a history of the presence of the lesions since birth or early childhood. In a few cases, however, the condition was reported as appearing later in life.

On reviewing the literature, it was noted that Jadassohn, Bandler and others described naevus sebaceus as composed histologically of sebaceous glands of normal structure. Kyrle,[36] however, pointed out that although normal glands may be present, the basal cell layer is usually atrophic or absent. The fatty degenerated sebaceous cells thus rest directly over the basal connective tissue membrane and retain their nucleus throughout the alveolus. Three of my cases (cases 1, 2 and 4) corresponded with Kyrle's criteria. In the fourth (case 3) the tumor was made up almost entirely of normal sebaceous glands. All cases showed secondary epithelial changes in the form of dilated follicular mouths filled with horn scales and sebum. Most of the glands had no connection with the follicles but lay free in the cutis. The cellular infiltrate is not a usual finding but indicates an inflammatory reaction to irritation or degenerative changes in the tumor. No typical nevus cells were found. In no case did the collagen and elastin enter into the process.

The occurrence of a basal cell epithelioma in case 2 may be interpreted as a malignant degeneration not associated with the essential constituents (sebaceous glands) but arising from the surface epithelium. In this case no connection of the epithelial proliferation with sebaceous glands, hair follicles or sweat glands was found. No reference to the development of a malignant degeneration on a nevus sebaceus could be found in the literature.

The treatment of these nevi consisted in removal by surgical excision or electrocoagulation. Good cosmetic results were obtained. In case 2, electrocoagulation and radium therapy gave excellent results.

SUMMARY AND CONCLUSIONS

1. The literature on naevus sebaceus is reviewed.

2. Four additional cases of naevus sebaceus with histologic studies are reported.

3. The possibility of the change of a benign naevus sebaceus into a malignant neoplasm should be borne in mind. Aside from this possibility, the disfigurement occasioned by the nevus is the only factor to be considered cosmetically.

1930 Wilshire Boulevard.

36. Kyrle, J.: Histobiologie der menschlichen Haut und ihrer Erkrankungen, Berlin, Julius Springer, 1925.

SENEAR-USHER PEMPHIGUS

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Since the original communication of Drs. Senear and Usher [1] on the subject of the association of lesions resembling lupus erythematosus and seborrheic dermatitis with pemphigus, fourteen similar cases have been variously reported and discussed in society transactions and published in the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY.

Of the patients only one died of typical chronic pemphigus, while several died of lupus erythematosus disseminatus acutus. I feel that it is of value to record the progress in one of these cases through chronic pemphigus to a fatal termination.

REPORT OF A CASE

Mr. H. O. J., aged 70, an American of Nordic stock, first seen in July, 1931, had an eruption of the face, chest and back. It was accompanied by some itching and burning; however, he felt well otherwise. The family history was unimportant. The patient's wife and three children were living and well, and there had been no stillbirths or miscarriages. He had always been in excellent health and had never had any serious illness. He had undergone no surgical procedures except the extraction of all his teeth fifteen years before he consulted us. A double denture was worn without difficulty. The patient was constipated but had no night sweats, fever or other gastro-intestinal or urinary symptoms. His weight had been the same for some years.

The eruption began in March, 1931, with a scaly itching patch over the right clavicle. This had caused him little concern; however, a similar lesion developed over the right zygoma, and several lesions developed on the back. The patient did not believe that they developed from blisters. The lesions persisted and were still present when I first saw him. Some weeks later a symmetrical, extensive, vesicular eruption of the hands, forearms, feet and lower part of the legs developed suddenly. He was treated elsewhere for several weeks for ringworm of the feet and hands with roentgen and ultraviolet rays and with local applications. During the treatments a few blisters appeared on the trunk. The hands and feet showed no improvement. One large, flaccid bulla developed over the left knee following slight trauma.

A complete physical examination gave negative results, except for the eruption and the double denture. The patient's blood pressure was 142 mm. of mercury systolic, and 82 diastolic. The urine was acid, had a specific gravity of 1.024 and showed no sugar or albumin, and the microscopic examination revealed only rare, white blood cells and epithelial cells. The Wassermann and Kahn tests were

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1. Senear, F. E., and Usher, B.: An Unusual Type of Pemphigus, Arch. Dermat. & Syph. **13**:761 (June) 1926.

negative on three occasions. The blood count was as follows: hemoglobin, 85 per cent; red cells, 4,300,000; white cells, 2,900; differential count, polymorphonuclears, 60 per cent; eosinophils, 24 per cent; small lymphocytes, 2 per cent; large lymphocytes, 3 per cent; transitionals, 1 per cent. The examination of scrapings and tops of vesicles from the feet in 20 per cent solution of sodium hydroxide showed no fungus elements.

The Eruption.—There were many pea-sized, slightly inflammatory papules on the scalp, which were covered by a greasy, yellow-brown, scale crust (fig. 1). Over the right malar eminence there was a dime-sized, mildly inflammatory patch covered

Fig. 1.—The moist, greasy, gray-brown crusts of scales as seen early in the disease.

with a gray, dry, more firmly adherent scale. There was, however, no atrophy, follicular plugging or telangiectasia noted in this lesion. Over the chest and back, largely in the presternal and intrascapular regions, were many dully inflammatory patches varying in size from that of a dime to that of a dollar, covered by a greasy, moist, dirty, yellow-brown, scale crust. Very light pressure on these patches caused the entire scale to peel off under the finger, leaving a denuded basal layer. This denuded epidermal surface was markedly similar to that seen when a large bulla is ruptured. At times small, noninflammatory, tense and flaccid bullae were seen scattered over the chest and back. The eruption of the hands and feet was composed of deep-seated, mildly inflammatory vesicles. The lesions here were symmetrical

and suggestive of erythema multiforme. The eruption had improved and become worse at intervals for some weeks. Nikolsky's sign was negative at this time.

Course and Subsequent History.—Alkalis and salicylates, combined with laxative medication internally, seemed to produce a marked improvement at first. Wet dressings were used on the hands and feet, and a mild tar paste applied to the moist, scaling spots on the trunk. Under this medication the patient showed satisfactory progress. Every few weeks, however, the eruption on the feet and hands would flare up, to subside again within from three days to a week. The scaling lesions became considerably thinner and less moist, but none of them disappeared entirely.

The constipation was extremely difficult to relieve. A low fat, high vitamin, high roughage diet was not sufficient to overcome it, but cascara in decreasing doses increased the bowel tonus so that laxatives were unnecessary during the early stages of the malady. Toward the end obstinate constipation again developed, and persisted until death.

Rare flaccid bullae developed over the trunk during this period. At times groups of small vesicles appeared over the back, shoulders and sacrum, which were suggestive of dermatitis herpetiformis. The general appearance and subjective symptoms, however, were never characteristic of this disease. When the patient was seen early in November, he had many vesicles of the feet. These now were more superficial and practically noninflammatory, being much more like lesions of pemphigus than erythema multiforme. During this same month, flaccid, noninflammatory bullae developed over the trunk, legs and arms, and a few on the face. Nikolsky's sign was now positive over the entire trunk and extremities. At this time the Davis [2] treatment, as modified by Grindon,[3] was started. Under this medication the bullae healed rapidly. The rapid healing of the ruptured bullae, combined with the new formation of lesions, gave a picture simulating pemphigus foliaceous. Ruptured bullae were first seen in the mouth early in December, and a sore throat and hoarseness developed at this time, due to denuded areas in the pharynx. The conjunctiva became injected, and denuded areas began to appear, later extending to the cornea, with vision limited to the perception of light.

Blood counts at frequent intervals showed a gradual decrease in the hemoglobin and red cells. The eosinophilia seen at the first two blood counts, both taken in July, had disappeared by September, as had the leukopenia. A count made early in December showed the white cells to be 6,700, with a normal, differential count. Examination of the stool revealed no intestinal parasites or ova, and there were no symptoms of amebic cysts or Trichinia to account for the eosinophilia. Other cases [4] have shown eosinophilia and leukopenia during the early stage of the disease. In this case repeated blood counts showed a decrease in eosinophils and a rise in the number of leukocytes as the picture of true pemphigus developed.

The Pels-Macht [5] phytopharmacologic test gave a reading of 79 per cent in August and 76 per cent early in December. The last reading was made after

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2. Davis, R. H.: Treatment of Pemphigus, Arch. Dermat. & Syph. **19**:451 (March) 1929.

3. Grindon, J.: Tryparsamide in Acute Pemphigus, Arch. Dermat. & Syph. **21**:25 (Jan.) 1930.

4. Gilman, R. L.: The Senear-Usher Syndrome, Arch. Dermat. & Syph. **24**: 84 (July) 1931.

5. Pels, I. R., and Macht, D. I.: Phytopharmacologic Examination of the Blood in Pemphigus, Arch. Dermat. & Syph. **19**:640 (April) 1929.

characteristic chronic pemphigus had developed. Early in January the patient was confined to bed in a powder bath with almost the entire trunk and extremities denuded (fig. 2). Handling of the patient became exceedingly difficult, for even the apparently normal skin would peel off under the hands of the nurse. His general condition declined; he became extremely weak and depressed and continued to lose weight until his death, Jan. 23, 1932, of typical chronic pemphigus.

Fig. 2.—Back view; the lesions are heavily caked with powder.

Pathologic Report (Dr. W. McK. German).—The section showed an absence of the horny layer of the epidermis. The granular and prickle cell layers showed marked intracellular and intercellular edema with vacuolation of many of the cells. No definite vesicles were seen. There were occasional inflammatory cells, largely lymphocytes. The corium showed definite edema and swelling of the papillae, with an infiltrate in the subpapillary layer and about the vessels of the

corium. This was largely composed of lymphocytes and fibroblasts, with a few eosinophils, polymorphonuclear leukocytes and plasma cells. In the deep corium the blood vessels were engorged and dilated.

COMMENT

This patient had been under constant and close observation for six months, and it had been most interesting to watch the evolution of

Fig. 3.—Low power photomicrograph showing marked edema, elongation and compression of papillae and sparse cellular infiltrate.

the lesions. A point noted on first examination, that by slight pressure on these crusted papules the entire crust would easily slip off, leaving the denuded basal layer, suggested to me an abortive pemphigus bulla; that is, during the early stage the etiologic agent was of such low toxicity that, although the characteristic lesion was initiated, it progressed only so far, then dried down, producing the crusted lesions.

Such a view is substantiated by a consideration of the microscopic study of these crusted papules (fig. 3). The changes in the derma were those seen in pemphigus; whereas, in the epidermis, instead of the prickle cells layer breaking down to form true bullae, the cells were vacuolated, and there was marked edema suggesting a stopping of the process before the usual end-result of vesicle formation is produced. A similar microscopic picture is illustrated by Gilman.[4] He also interpreted these changes as the site of future bleb formation. Finnerud's [6] interpretation of the microscopic appearance of Senear's case 3, a section similar to that in the case reported, was an early stage of pemphigus vegetans. Mook, Weiss and Bromberg [7] and Wise [8] felt that their cases were true lupus erythematosus disseminatus with associated bullous lesions. The microscopic pathology supported them in this belief.

It might be well to exclude cases of lupus erythematosus disseminatus with bullous lesions in which microscopic examination substantiates this diagnosis from the group of Senear-Usher pemphigus, and to limit this group to cases showing the pathologic process which seems to be identical except for degree in the cases examined by Finnerud, Gilman and by me. Dr. Wise,[8] in the discussion of the original communication by Drs. Senear and Usher, felt that these cases were all cases of lupus erythematosus disseminatus; however, in a later article [9] he felt that the condition in some of the cases reported was lupus erythematosus, but admits the possibility of pemphigus showing lesions similar to those of lupus erythematosus and seborrheic dermatitis. Ormsby [10] felt that some of these cases were definitely acute lupus erythematosus with bullous formation; however, he maintained that these cases are clearly differentiated from pemphigus with crusted lesions.

SUMMARY

1. A case of pemphigus is reported which began as a Senear-Usher syndrome, developed within a comparatively short time into true pemphigus vulgaris and ended in death.

2. Microscopic study of the early crusted lesions suggests a diagnosis of early abortive pemphigus bullae.

3. This is the second reported case with this type of onset which developed into chronic pemphigus and ended in death.

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6. Finnerud's report on Senear and Usher (footnote 1, p. 769).

7. Mook, W. H.; Weiss, R. S., and Bromberg, K. L.: Lupus Erythematosus Disseminatus, Arch. Dermat. & Syph. **24**:789 (Nov.) 1931.

8. Wise, F., in discussion on Senear and Usher (footnote 1, p. 781).

9. Wise, Fred: Lupus Erythematosus Bullosus or Pemphigoides, M. J. & Rec. **134**:227 (Sept. 2) 1931.

10. Ormsby in discussion on Wise (footnote 7, p. 828).

LICHEN PLANUS OF THE NAILS

REPORT OF A CASE

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NEW YORK

Changes of the nails have rarely been reported in lichen planus, though many studies of the disease have been recorded. In an analysis of 270 cases, Little [1] mentioned only one in which changes of the nails followed lichen planus. He pointed out that the nails are seldom attacked by the disease, and emphasized the silence of most authors on the subject as corroborating this fact. White,[2] in reporting 64 cases and Culver,[3] in reporting 148, do not mention changes of the nails, even though the hands and feet were often involved.

As early as 1900 [4] and again in 1905,[5] Heller questioned the occurrence of changes of the nails in lichen planus since in 80 cases he did not observe such a lesion. He considered the few cases already reported as possibly belonging to the pityriasis rubra pilaris (i.e., lichen ruber acuminatus) group or, more probably, eczematous disease of the nails in combination with lichen planus. Later,[6] having observed such cases and following the publication of further reports, he admitted that changes of the nails which are specific for this dermatosis do occur in lichen planus.

The controversial views concerning the subject and the scarcity of cases reported in the American literature warrant the recording of a case in which all of the finger-nails were attacked in association with lichen planus of the integument.

From the Department of Dermatology, Vanderbilt Clinic, College of Physicians and Surgeons, Columbia University.

1. Little, E. G.: Lichen Planus, J. Cutan. Dis. **37**:639 (Oct.) 1919.

2. White, C. J.: Lichen Planus: A Critical Analysis of 64 Cases, J. Cutan. Dis. **37**:671 (Oct.) 1919.

3. Culver, G. D.: A Clinical Study of Lichen Planus, Arch. Dermat. & Syph. **1**:43 (Jan.) 1920.

4. Heller, J.: Die Krankheiten der Nägel, Berlin, A. Hirschwald, 1900, p. 144.

5. Heller, J., in Mraček, Franz: Handbuch der Hautkrankheiten, Vienna, Alfred Hölder, 1909, vol. 4, p. 599.

6. Heller, J.: Die Krankheiten der Nägel, in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1927, vol. 13, p. 222.

REPORT OF CASE

History.—J. M. C.,[7] a white man, aged 41, single, born in the United States, a warehouse worker, whose family history was irrelevant and general health good, did not recall having had previous disease of the skin. In August, 1930, following a severe sunburn, he noticed a diffuse erythematous and scaling eruption which appeared simultaneously on all the areas subsequently mentioned. These lesions resisted all local treatment with salves and pastes. The patient complained of extreme dryness and stiffness of the hands. There was no itching.

Examination.—The patient was first seen on Oct. 14, 1930. He was well built and inclined to adiposity. Physical examination gave negative results. The scalp, face and neck were clear. On the buccal membranes were symmetrical, slightly thickened, projecting, grayish-white, irregularly outlined patches, surrounded by an erythematous halo. The chest, abdomen, back, genitals and thighs were free. On the shoulders, forearms and lower part of the legs was an almost symmetrical eruption consisting of a large number of isolated and grouped papules and coalescing plaques, varying in size and shape. The individual papules were small and punctiform, varying from 1 to 5 mm. in diameter. They were flat, polygonal, shiny and of a reddish violaceous and brownish color. Some of the lesions were infiltrated. They were somewhat raised above the surface of the skin and covered with a fine adherent scale. The palmar surface of the hands showed numerous large isolated papules along the ulnar border and also a coalescence of papules, some resembling deep-seated vesicles and others showing marked umbilication. In the center of the palm was a large, irregular, yellow-white, dry, hyperkeratotic area with a few fissures and rhagades. On the dorsal surface of both hands were large elevated papules with a mosaic-like coalescence which were separated by bizarre furrows like dividing lines. Similar large, isolated papules extended along the dorsal surface of the fingers toward and onto the nails, where two or three were visible through the transparent nails of the index and middle fingers of both hands (fig. 1).

The most striking changes occurred in the nails of the hands. Those of the thumb and index fingers were the first involved. Then in succession the remaining finger-nails were involved, with varying intensity. They became lusterless and appeared yellowish gray. The lunula lost its shape but preserved its color for a longer period. The nail-plates became thinned and softened and lost their elasticity and convexity, but were firmly attached to the nail-beds. The surface of the nail-plates was rough and uneven and showed numerous irregular longitudinal striations, a few pittings and furrows, which appeared discolored. In time, these longitudinal striations and furrows became more pronounced throughout the entire length of the nail-plate. Neither the toe-nails nor the plantar surface of the feet was involved.

Microscopic examinations for tinea of the nails gave repeatedly negative results. The urine showed faint traces of albumin and a marked trace of indican. The acidity was increased to 57 (expressed in cubic centimeters of tenth-normal sodium hydroxide), and the specific gravity was 1.028. The urine also showed a moderate amount of mucus and a few pus cells. The Wassermann reaction was negative.

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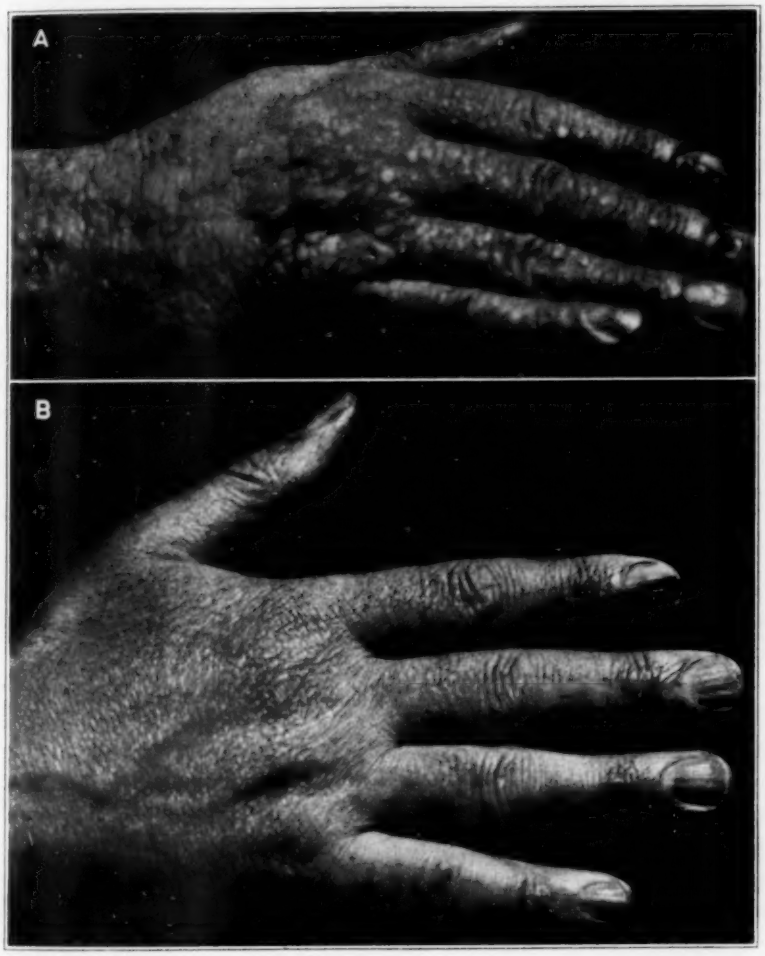
7. This patient was presented before the Vanderbilt Clinic Clinical Society and the Section of Dermatology of the New York Academy of Medicine. Feit, H.: Lichen Planus with Involvement of Palms and Nails, Arch. Dermat. & Syph. **23**: 772 (April) 1931.

Course and Treatment.—Treatment consisted of weekly injections of 2 cc. of mercuric salicylarsenate given intramuscularly and fractional doses of unfiltered roentgen rays. The patient gained 11 pounds (5 Kg.) after ten injections of mercuric salicylarsenate, whereupon the injections were discontinued because of the patient's adiposity. The total amount of roentgen treatment given varied from 1½ to 2 erythema doses administered to all the affected areas, including the nails.



A, hand before treatment, showing the crocodile-like cutaneous eruption. Note the changes of the nails of the index and middle fingers and the small papules in the lunular region. *B*, same hand five months later. The nails recovered, but they show marked longitudinal striations.

The use of bland ointments was prescribed for the dryness of the hands. The response was prompt and satisfactory. Practically all the cutaneous manifestations disappeared; however, the nails became especially brittle and appeared ragged at the free edges. The base of the nails and the lunular parts were soft. The

nail-plates were rough and partially exfoliating. There was increased tenderness, and the nails caught on all objects, compelling the patient to wear gloves.

On Feb. 16, 1931, the nails showed slight changes. The color was light pink, and the free edges of several nails were broken off. The nail of the index finger of the right hand seemed partially split in the midline.

On May 16, the nails had improved. Their consistency was firmer, the surface smoother and the color more normal; however, the striations and broken free edges were still present. On the nails of the thumb and, especially, the fourth and fifth fingers of the left hand were thick, sharp, longitudinal ridges, 2 mm. in width, throughout the entire length.

When the patient was seen again, on July 24, the nails appeared slightly atrophic, though more normal in shape, color and texture. The free edges were irregular with superficial splittings of the nail-plates extending for a short distance beyond the free edges. The dirty gray striations were still visible but less pronounced.

When the patient was last seen on October 23, the nails appeared normal in consistency and color, except for some longitudinal striations which were still present. There was superficial splitting on the nail of the index finger of the right hand. The entire nail-plate was lighter in color, but the lunula was not easily distinguished from the rest of the nail. The thumb-nail of the left hand showed superficial splittings, and the free edge was broken. The index finger-nail was normal, and the middle finger-nail showed striations and superficial splittings, but the free edge was normal. The fourth and fifth finger-nails were atrophic, and the free edges were brittle. There were ridges showing splittings from the free edges to half the distance from the nail walls.

REVIEW OF THE LITERATURE

The American and English literature, as well as the textbooks, make only brief mention of this condition, though there are several cases reported in the French and German literature.

Gottheil [8] presented a patient with lichen planus unguium before the Manhattan Dermatological Society in 1908. The patient had recurrent lichen planus of the genitals, and the perineal and circumanal regions. All of the finger-nails and several toe-nails were affected. They showed small black spots ranging in size from that of a pinpoint to that of a pinhead at the proximal portion of the lunulas, which eventually advanced toward the free edge of the nails, where the lamellae split and small open depressions surrounded by ragged and brittle nail substance became visible.

Riecke,[9] who reviewed the cases published up to 1905, did not accept all as being characteristic for lichen planus. He agreed with Heller [4] that the earliest cases observed may have belonged to the

8. Gottheil, W. S.: Lichen Planus Unguium, J. Cutan. Dis. **27**:317 (July) 1909.

9. Riecke, E., in Mraček, F.: Handbuch der Hautkrankheiten, Vienna, Alfred Hölder, 1905, vol. 2, p. 572.

lichen ruber acuminatus group. He doubted that the case of Hornkohl [10] was typical for lichen planus because the latter described koilonychia of a few nails, which was unlike the findings of other authors. Subsequently, Crocker [11] reported koilonychia following lichen planus.

It is interesting to note that Weyl [12] and Róna [13] observed changes of the nails years before the onset of lichen planus.

Dubreuilh [14] described the following changes of the nails in a patient with generalized lichen planus. The nail-plates were thickened, roughened and adherent to the nail-bed. There were longitudinal striations running parallel through the entire length of the nail, barely 0.3 mm. in width; they were deep and in some places formed striking grooves. The posterior nail walls were greatly thickened. Subungual hyperkeratosis was present on the small finger-nail. The condition of the nails improved slowly after treatment with arsenic.

Du Castel and Druelle [15] described in great detail a case in which all of the finger-nails were involved with equal intensity and the toe-nails were diseased long before the appearance of the lichen planus eruption. The fingers, the walls of the nails and the free borders were intact. Elevated projections on the nails gave the impression of papules which tended to form longitudinal linear series with a few groovings. Some followed the length of the nail, while others were incomplete. Subungual papules were visible through the transparent nail.

Friedmann [16] reported two interesting cases. In the first, there was atypical lichen planus, atrophicans and recidivans; in the second, lichen planus verrucosus, in which the nails of the hands and toes were involved and which resulted in onycholysis totalis of several toe-nails.

Klingmüller [17] described changes in the nails of the hands and toes, which became thickened and increased to 1 cm. in diameter. After one year of treatment with intensive roentgen radiation and the administration of arsenic, new nails started to grow, only to be followed by the recurrence of changes in the nails.

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10. Hornkohl, F. W., quoted by Riecke (footnote 9).

11. Crocker, H. R.: Diseases of the Skin, Philadelphia, P. Blakiston's Son & Co., 1905, vol. 2, p. 1257.

12. Weyl, A., quoted by Riecke (footnote 9).

13. Róna, S.: Zur Lehre des Lichen ruber, Monatsh. f. prakt. Dermat. **7**:825 (March) 1888.

14. Dubreuilh, W.: Lichen plan des ongles, Ann. de dermat. et syph. **2**:606 (June) 1901.

15. du Castel and Druelle: Altérations des ongles chez un malade atteint de lichen plan, Ann. de dermat. et syph. **4**:578 (July) 1903.

16. Friedmann, M.: Ueber einige seltene Nagelerkrankungen, Arch. f. Dermat. u. Syph. **135**:161, 1921.

17. Klingmüller, V.: Ueber Lichen ruber verucosus vegetans, Arch. f. Dermat. u. Syph. **113**:517, 1912.

Juliusberg,[18] in 1931, discussed at length lichen planus of the nails. He doubts that all cases reported as such can be accepted with certainty as specific for lichen planus. Up to the present time a case of primary lichen planus of the nails has not been proved. However, in those cases in which the skin, mucous membranes and the nails are simultaneously involved, a specific lichenous process of the nails is indicated.

COMMENT

In the case described the profound changes of the finger-nails comprised the most unusual feature. Their clinical picture resembled closely the detailed descriptions of the nails in lichen planus as given by Dubreuilh,[14] du Castel and Druelle [15] and other observers. The peculiar discoloration, the dark, dirty gray of the longitudinal striations and the groovings, flutings, brittleness and splitting of the nail-plates were mentioned by most authors as characteristic. Other features mentioned were transverse furrows and punctiform depressions (Gaucher and Druelle [19] and Jadassohn [20]). The occasional thickening of the posterior walls of the nails and subungual hyperkeratosis were observed by others, although they were absent in the case reported.

The views about the prolonged course of this condition and its resistance to therapeutic measures are the same in all reports; restitution of the nails, as the end-result, was observed in a few cases. In others, koilonychia followed (Hornkohl [10] and Crocker [11]). Onycholysis resulted in Lavergne's,[21] Friedmann's [16] and Gray's [22] cases.

There seems to be no definite clinical picture of lichen planus of the nails. The apparent differences in the clinical picture, course and end-result are probably due to the type of lichen planus, the degree of involvement, the duration of the disease and the therapy. The toe-nails seemed to be less often affected, and the condition was less characteristic than that of the finger-nails. Most authors described them as thickened, discolored and deformed, but no lesions similar to those of the finger-nails were seen.

Little is known of the pathologic anatomy of the nails in lichen planus, since mostly broken-off parts were examined. The matrix and the nail-bed were considered as being primarily affected with consecutive changes of the nail-plates. Whether these alterations may be due to trophoneuroses is open to question.

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18. Juliusberg, F., in Jadassohn, J.: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1931, vol. 7, p. 75.

19. Gaucher and Druelle, quoted by Heller (footnote 6).

20. Jadassohn, J.: Krankheiten der Haut, Handbuch der praktischen Medizin, Stuttgart, Ferdinand Enke, 1901, vol. 3, p. 363.

21. Lavergne, F., quoted by Riecke (footnote 9).

22. Gray, quoted by Juliusberg (footnote 18).

Juliusberg [18] believes that some of the changes of the nails may be caused by a general nutritional disturbance rather than a specific lichenoid localization.

Eczema, psoriasis and onychorrhexis have been mentioned by many authors as bearing a great resemblance to lichen planus of the nails. The similarity of the anatomic and clinical changes cannot be denied, considering the multiformity of changes of the nails occurring in these diseases. In the case reported, the absence of eczematous and psoriatic lesions on the body, the history and the course tend to exclude eczema and psoriasis. The diagnosis of onychorrhexis idiopathica could be easily accepted in the absence of lichen planus lesions.

SUMMARY AND CONCLUSION

1. A case of lichen planus of the finger-nails is reported, and the literature is reviewed.

2. The eruption appeared following a severe sunburn on the exposed parts of the body. The changes of the nails were associated with lichen planus of the palms, dorsum of the hands and fingers.

3. The clinical appearance of the nails presented most of the salient features described by other authors.

4. The improvement of the nails, though slow, was greatly influenced by the administration of roentgen therapy.

5. After comparing this case with others in the literature and having observed it through a long period of time, I feel that this case can be readily accepted as one of lichen planus of the nails.

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KERATODERMA BLENNORRHAGICUM

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The relationship of the cutaneous manifestations to the syndrome following some cases of gonorrhea was first described by Vidal [1] in 1893. The literature was comprehensively reviewed by Keim [2] in 1924, and at that time fifty-eight cases had been reported, his case being the fifty-ninth. In 1927 Rostenberg and Silver [3] cataloged those recorded since Keim's review of 1924 and added another one. Since that time four other cases have appeared in the literature, one reported by Louste and Lévy-Franckel,[4] one by Scholtz [5] and two by Barrett,[6] thus making a total of approximately seventy-five cases that have been described.

The disease usually occurs in men, although exceptions have been reported by Isaac,[7] Lee,[8] Robert [9] and Lévy-Franckel,[4] and is characterized by a history of gonorrheal urethritis, arthritis and lesions of the skin. The eruption is usually symmetrical, involving, as a rule, the palms and soles. The scalp and penis are not infrequently affected, and

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1. Vidal: Éruption généralisée et symétrique de croûtes cornées avec chute des ongles d'origine blennorrhagique, coincidant avec une polyarthritic de même nature. Récidive a la suite d'une guérison de la première maladie, Ann. de dermat. et syph. **4**:3, 1893.

2. Keim, H. L.: The Histogenesis of Keratoderma blennorrhagicum, Arch. Dermat. & Syph. **9**:435 (April) 1924.

3. Rostenberg, Adolph, and Silver, Henry: Keratoderma Blennorrhagicum, Arch. Dermat. & Syph. **16**:741 (Dec.) 1927.

4. Louste, A., and Lévy-Franckel, A.: Keratoderma Blennorrhagicum in a Girl Five Years Old, Bull. Soc. franç. de dermat. et syph. **37**:362 (March) 1930.

5. Scholtz, Moses: A Syndrome of Gonorrheal Keratoderma, Arch. Dermat. & Syph. **21**:961 (June) 1930.

6. Barrett, C. C.: Keratoderma Blennorrhagicum, Arch. Dermat. & Syph. **22**: 627 (Oct.) 1930.

7. Isaac, C. L.: A Case of Keratodermia Blennorrhagica in a Woman, Brit. J. Dermat. **32**:195, 1920.

8. Lee: Keratodermia Blennorrhagica, Edinburgh M. J. **28**:99 (April) 1922.

9. Robert: Contribution a l'étude des troubles trophiques cutanées dans la blennorrhagie, Thèse de Paris, April 28, 1897; Ann. der dermat. et syph. **8**:1053, 1897.

lesions may also occur over the trunk and over the upper and lower extremities, with a special predilection for the areas over joints. The manifestations on the skin usually begin as pinpoint vesicles which develop into waxlike, yellow papules; these in turn become the crusted structures which are so characteristic of the disease, the crusts being rupia-like, the older ones resembling cutaneous horns. These lesions are usually surrounded by zones of erythema, and the keratoses persist for long periods unless removed.

The point of view that this condition is a specific entity has not been accepted by all, and Adamson has pointed out certain similarities, not only in the clinical picture but also in the histologic observations, between this disease and arthropathic psoriasis. As the causative organism has been only infrequently demonstrated in material from the lesions (Wadsack,[10] Gager,[11] Barrett[6]), it is obvious that other criteria must be observed in order to establish a differential diagnosis. Keim has clearly traced the changes that occur in the histologic picture as the cutaneous lesions progress through their various phases. The case about to be described showed, it was thought, some aspects that assisted in establishing diagnostic criteria, as well as certain variations from the usual case that merit description.

REPORT OF A CASE

L. F., aged 33, an unmarried Italian, a worker in a shoe factory, had been a resident of the United States for the past ten years. Except for "trouble with the hair on his arms and legs," he had an unimportant past history. The family history was irrelevant. Nine years ago he contracted gonorrhea, which was treated and "cured" in two months. The following year he began to have pains in his joints, and noticed that he was easily tired. About two years after the acute attack of gonorrhea, purulent urethritis developed which was diagnosed by his physician as an exacerbation of the first infection. The pains in the joints continued, becoming worse, and at this time the patient noticed a cutaneous condition, which consisted of a transitory erythema about the joints and on the extremities. Following this condition, hard, wartlike papules appeared around his joints and on his palms and soles. They were at first extremely small, but grew in size until the largest became 1 cm. in diameter and was raised from 5 to 8 mm. above the level of the skin. Some of the larger lesions would fall off after a time, leaving a pigmented area of thin epidermis, while others would be replaced by a new papule. All of the lesions were painful on pressure; those on the feet made walking difficult, while those on the hands prevented the patient from working. In order to lessen the pain he was in the habit of digging out the centers of the largest papules, thus giving them a crateriform appearance.

Three years prior to admission, four years after the onset of the cutaneous symptoms, he contracted syphilis, for which he was treated with arsphenamine and mercury at another clinic. The treatment had no effect on the pains in the

10. Wadsack: Ein gonorrhea Exanthem, Berl. klin. Wchnschr. **43**:966, 1906.

11. Gager, E. C.: Keratodermia Blennorrhagica, J. A. M. A. **78**:941 (April 1) 1922.

joints or on the cutaneous lesions, and subsequent antisyphilitic treatment by one of us met with the same result.

General Examination.—The patient was thin and pale, his cheeks were pinched, and his expression was one of anxiety. He walked with difficulty, sliding his feet along the floor in order to minimize movement. He was alert and cooperative. On examination, the blood pressure was found to be 118 systolic and 62 diastolic. The urine showed a faint trace of albumin. The red cell count was 4,950,000; the white cell count was 8,700. The differential count showed: lymphocytes, 26 per cent; polymorphonuclear leukocytes, 72 per cent, and eosinophils, 2 per cent. The Wassermann and Kahn tests of the blood were both four plus. Roentgenograms of the chest, joints and urinary tract showed nothing of interest. A complement-fixation test for gonorrhea was weakly positive. His prostate was

Fig. 1.—*A*, mature, keratotic lesion on knee; atrophic hair follicles of lichen spinulosis may also be noted; *B*, mature keratotic lesion on elbow.

enlarged and tender. Repeated smears of the prostatic secretion were negative for tubercle bacilli and gonococci, and a culture showed Staphylococcus albus.

The covering of the normally hairy surfaces of the forearms, hands, thighs and legs resembled pigskin. Only scattered hairs were present over the legs and arms, and the follicular mouths were patent and depressed During the winter numerous hairs over the extremities became encased in a hard, spiny covering that projected from 1 to 3 mm. above the skin. The follicular orifices were inflamed, and the hairs and spicules fell out, leaving an atrophic hair follicle (fig. 1, *A* and *B*). This condition had existed from early childhood. It showed some tendency to grouping, but, as the hair on these surfaces was sparse, this feature was not particularly well marked. A biopsy was done, and this angle of the case was reserved for further study, with a tentative diagnosis of lichen spinulosus.

Examination of the Cutaneous Lesions.—Keratotic lesions (fig. 1), varying in size from 1 to 10 mm. in diameter and up to 8 mm. in height, were present on the palms, the soles, the hip joints, the patellar region, the extensor surfaces of the elbow and the sides of the ankles. The face, scalp and penis were free. The fourth and fifth toe-nails of the left foot were displaced by yellow, keratotic papules.

The earliest lesions found consisted of semitranslucent spots, the size of a pinpoint, closely resembling droplets of wax, as described by Vidal.[1] These yellow papules were observed for a number of weeks, during which time they increased in size. The surface was at first level with the skin, but later became umbilicated. Following this, there was a gradual increase in diameter, and the lesions became somewhat elevated. As their size increased, they lost their waxy color and took on the appearance of stratified layers of corneum, resembling to some extent cutaneous horns surrounded by an areola of erythema. The process of development of the lesions was, however, extremely slow. It took months for the mature lesions to form, and, once mature, they would remain in place for an indefinite time, eventually falling off, leaving a thin, glistening red epidermis, which later became somewhat pigmented, the pigmentation finally fading. The lesions were discrete, except on the soles, where several areas coalesced to form large, elevated, horny plaques, the surfaces of which were irregular. All the lesions were extremely superficial, and those on the palms and soles, although they, too, became elevated, retained their yellow color. The lesions were rather distinctive in that they were painful on pressure. Furthermore, an evanescent polymorphous erythema would appear, especially about the elbow, wrists and knee joints and over the hands and forearms when the patient experienced an attack of arthritis.

Course and Therapy.—On Nov. 10, 1930, the patient was admitted to St. John's Hospital to the service of Drs. Carroll and Schattyn for a genito-urinary survey. Their examination revealed a slight urethral discharge that did not show gram-negative diplococci. Both glasses of urine were clear, except for a few flakes. The prostate was found to be irregular, hard and tender. The fluid expressed showed pus (four plus). Both seminal vesicles were palpable and enlarged. A mild stricture was found on the passage of bulb sounds, and following the passage of a 22 sound a profuse discharge was produced, but again no gonococci were demonstrable. Intravenous injection of skiodan revealed no abnormality of the kidneys or ureters. The introduction of instruments, such as a Kollman dilator, resulted in an exacerbation of the symptoms in the joints and in the skin, at first particularly affecting the erythematous eruption, but this was followed in several days by the appearance of new keratotic lesions over the extensor surface of the knees and elbows. On Nov. 18, a bilateral puncture of the vas deferens was done by Dr. Grayson Carroll according to the technic of Belfield. A 1 per cent solution of mild silver protein was injected into the vas deferens. Massage and dilations were continued, and on Dec. 3 the patient left the hospital, having gained considerably in strength and weight, so that he was able to be about. Treatment was continued twice weekly, and the condition of the joints improved markedly. The erythematous eruption occurred less often, and was not so extensive as formerly. New keratotic lesions that had appeared in the skin were arrested in their development, but there was no marked tendency on the part of the old lesions to disappear. Vaccine therapy was instituted, and prostatic massage and drainage were continued by Dr. Martin Schattyn, with further improvement.

After seven months' treatment, the patient was allowed to rest for two months, after which he returned much improved. The symptoms of the joints, except for

a slight discomfort related to changes in barometric pressure, had disappeared. Attacks of erythema were limited to small areas over the joints. The keratotic lesions had diminished markedly in number, and those that remained were much less sensitive to pressure. No new lesions of this type had appeared.

Vaccine therapy was continued irregularly because of lack of cooperation, and when the patient was last seen, more than a year after the beginning of treatment, he was able to get about in comfort. Nearly all the keratotic lesions had disappeared without the aid of local treatment, and the patient had gained considerably in weight.

Histopathology.—Material from two biopsy specimens was fixed in formaldehyde and embedded in paraffin. Sections were cut in thicknesses varying from 5 to 10 microns and were stained with hematoxylin and eosin and Giemsa's stain. The first lesion to be removed was a typical, old, keratotic one, but the second biopsy was performed to study an early type of lesion, and for this purpose a young papule was selected that was similar in character to those that progressed to the older keratotic type.

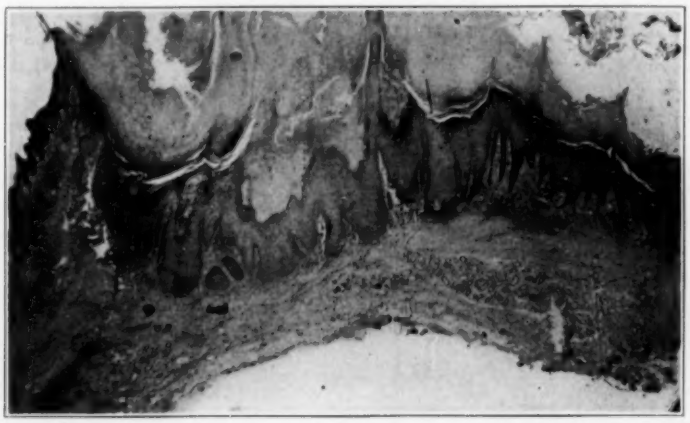

Fig. 2.—Typical old lesion showing marked hyperkeratosis, parakeratosis and thickening of prickle cell layer, together with an increase in the size of the interpapillary pegs and an inflammatory cell infiltration of the corium. Hematoxylin and eosin; × 12.

Sections taken from the early lesion showed an umbilicated area in the skin which was fairly well filled with keratin in which persisting nuclei were evident on occasion. For the most part the epidermis was thin in this region, and prolongations into the corium were evident only at the periphery of the affected region. The granular layer of cells was fairly well marked, and the prickle cell layer was thin. The basal cells were not sharply demarcated, and many were seen to be arranged in a plane parallel with the level of the skin. Beneath this layer was a zone of tissue composed for the most part of fairly young fibroblasts and of young capillaries; it was rather heavily infiltrated by lymphocytes. An occasional plasma cell was present in the infiltrate, and a few eosinophils were also noted. The Giemsa preparation showed a few mast cells to be scattered about. There was no evidence of a suppurative type of reaction, and polymorphonuclear leukocytes were observed only with difficulty and infrequently.

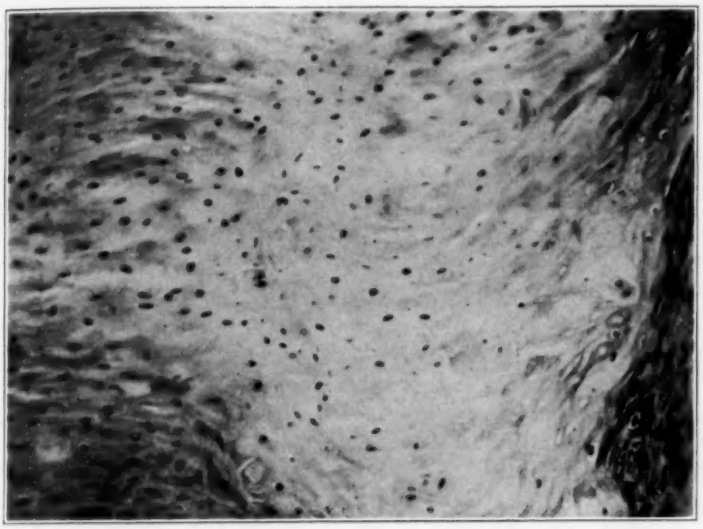

Fig. 3.—Older lesions, showing parakeratosis. The persisting nuclei are not as marked on the right side of the picture where some keratohyaline granules are evident in the underlying granular layer. Hematoxylin and eosin; × 300.

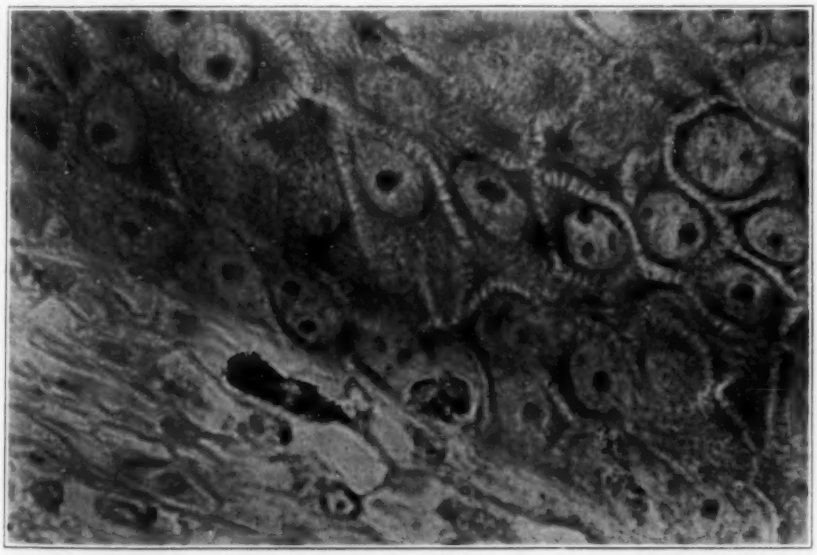

Fig. 4.—Edematous rete; the intercellular bridges are well marked, and one mast cell may be seen. Giemsa; × 800.

Turning next to the older lesion (fig. 2), it was found that many of the characteristic features of the typical pathologic picture were evident. The keratin layer was enormously thickened and showed a patchy distribution of persisting nuclei still present within it (fig. 3). On tracing down these areas it was found that the regions of keratin showing nuclei corresponded to areas in the granular layer that showed a scarcity of keratohyalin granules. In other areas, however, the granular layer was well marked. The prickle cell layer was also thickened; it showed a marked intercellular edema that threw the intercellular bridges into sharp relief (fig. 4). Various wandering cells were on occasion seen in the epidermis, particularly eosinophils and mast cells (fig. 5), and some sections showed a remarkable infiltration of the former. The basal layer of cells was sharply demarcated from the corium, and the cells were arranged in a normal plane.

Beneath the epidermis was found a zone of fibroblasts and young capillaries that again showed an intense, lymphocytic infiltration. Plasma cells were, however, also present in good numbers (fig. 6), and some sections showed a remarkable infiltration of eosinophils as well. The Giemsa preparations again showed many mast cells to be present, and these could be easily identified by their long processes filled with fine, bright-staining, purplish-red granules (fig. 4). Only an occasional polymorphonuclear leukocyte was seen.

COMMENT

Whereas this case presents the requisites for a diagnosis of keratoderma blennorrhagicum, namely, a history of acute gonorrhea followed by chronic urethritis, arthritis and cutaneous lesions of a typical nature, it is also seen that there are several points on which it differs from the usual case.

1. Duration. This particular case revealed the fact that cutaneous lesions had been present for approximately seven years, which is a longer period than has been reported for any case in the literature.

2. Tenderness on pressure. The presence of tenderness on pressure appears to be unique with this case. Discomfort caused by the keratoses has been referred to, though no one has stressed the painful character of these areas when subjected to direct pressure.

3. Absence of a suppurative phase of cutaneous lesions. It has been noted in the description of the cutaneous lesions that they began as pinpoint lesions resembling droplets of wax, and that they gradually progressed to the keratotic stage without evidence of formation of pustules, in this respect resembling closely those in the original case of Vidal. Reference to the histologic pictures bears out the fact that there was no evidence of an acute suppurative type of reaction in the material removed for biopsy. It is exceedingly interesting to see that in this particular example of the disease the reaction was from the first of a subacute and chronic nature. It will be recalled that the predominant cells in the infiltration were lymphocytes, plasma cells and eosinophils, and that there was a marked scarcity of polymorphonuclear leukocytes.

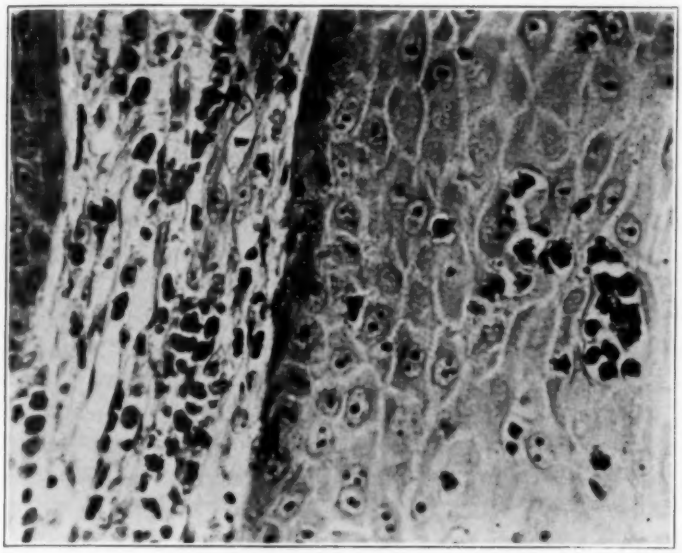

Fig. 5.—Papilla and two interpapillary pegs showing an eosinophilic infiltration. The combination of the hematoxylin and eosin stain, panchromatic plate and green filter allowed the cytoplasm of the eosinophils to appear black in the print; × 300.

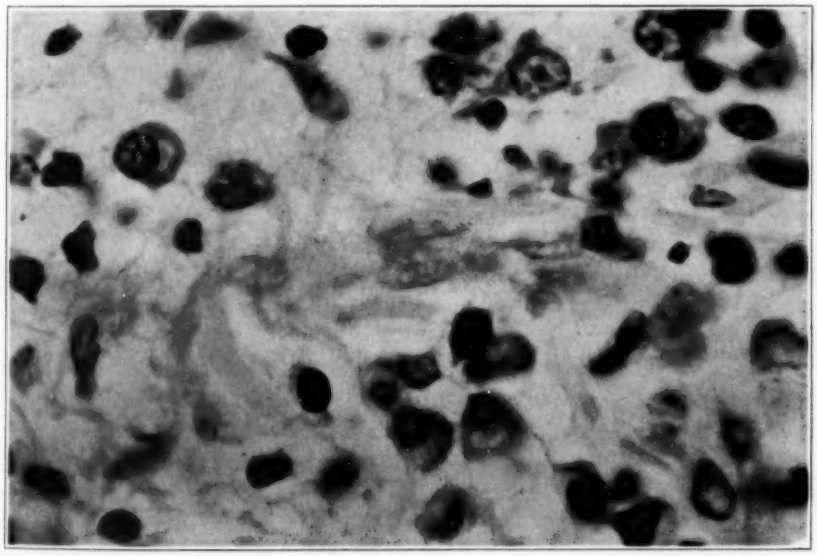

Fig. 6.—Inflammatory cell infiltration of corium in older lesion. Plasma cells may be seen to make up a considerable part of the infiltrate; × 1,000.

Consequently, it is evident that the absence of any formation of pustules on examination of the cutaneous lesion is well substantiated by the histologic observations and that it is entirely possible for these characteristic keratotic lesions to arise in the skin without demonstrating pustule formation indicative of a suppurative inflammatory process.

4. Erythematous eruption. In addition to the hyperemic border that surrounded the crusts, in this case there was also present an erythematous eruption that appeared at times over the joints and over the extremities. Buschke,[12] in describing the eruptions due to gonococci, divided them into four groups: (1) simple erythema, (2) urticaria and erythema nodosum, (3) hemorrhagic and bullous exanthemas and (4) hyperkeratoses. He believed that hyperkeratosis blennorrhagicum should be separated from the erythematous types of eruptions caused by the gonococcus. At a later date he[13] modified this strict separation because of the erythematous areola that surrounds the characteristic crusts and because of the occurrence of vesiculation and pustulation in the early lesions.

That this later conception of Buschke is correct there can be little doubt, for, in addition to the aforementioned signs of inflammation, erythema surrounding the crusts, vesiculation and pustulation, there are definite signs of inflammatory reaction in the cutis. Keim and others have pointed out this fact, and our case presents evidence that undoubtedly places keratoderma blennorrhagicum in the category of inflammatory keratoses. The occurrence of an erythematous eruption in a patient having keratoderma blennorrhagicum seems to be but another form of cutaneous response occurring in association with the more frequently encountered symptoms. As a larger number of cases are observed, it is reasonable to suppose that more variations in the clinical picture will be recognized. It should be indicated, however, that there was no apparent direct relationship in this case between the erythematous eruption and the formation of the keratoses.

DIFFERENTIAL DIAGNOSIS FROM PSORIASIS

It was thought that this particular case offered some excellent evidence pertaining to the differential diagnosis between keratoderma blennorrhagicum and psoriasis. It has been stated that the histologic pictures in the two conditions are similar, and that it is rather doubtful that this condition can be differentiated from arthropathic psoriasis. It is true that in a general way the histologic pictures of the two con-

12. Buschke, A.: Exantheme bei Gonorrhöe, Arch. f. Dermat. u. Syph. **48**:181, 1899.

13. Buschke, A.: Ueber universell symmetrische entzündliche Hyperkeratosen auf uro-septischer und arthritischer Basis, Arch. f. Dermat. u. Syph. **113**:223, 1912.

ditions do resemble one another, each demonstrating a parakeratosis, an acanthosis, an edema of the rete and an inflammatory cell infiltration of the corium. On the other hand, careful inspection brings to light the fact that there are factors present that in some cases at least offer a considerable amount of assistance in establishing a differential diagnosis. Referring specifically to the older lesion in the case presented, it was seen that a considerable number of the cells of the infiltrate were plasma cells, and the absence of plasma cells has been considered one of the diagnostic features of psoriasis (McCarthy[14]). In addition to this finding, there were marked thickening and edema of the prickle cell layer of the skin so that the epidermal surface was far removed from the blood vessels in the corium, a point that is also of significance in separating the two conditions. The third differential factor to consider in this instance pertains to the character of the inflammatory reaction as compared to psoriasis. It is evident from a study of the case presented that there was marked absence of any suppurative type of reaction. Polymorphonuclears were found only with difficulty in the sections, and there was no evidence of pustulation in the cutaneous lesions. Consequently, there was no sign in the sections of one of the most characteristic features of the picture of psoriasis, namely, the presence of infiltrations of polymorphonuclear leukocytes in the form of micro-abscesses. Consequently, it is felt that the way this case differed from the usual form was of assistance in establishing the condition as an entity.

SUMMARY

A case of keratoderma blennorrhagicum is reported in which the cutaneous manifestations began as small pinpoint areas resembling droplets of wax and progressed to typical keratotic lesions, without evidencing clinically the phases of vesiculation or pustulation. The case differed from the usual case in that it was of a long duration, namely, seven years, and that it demonstrated an erythematous eruption chiefly over the joints and extremities in addition to the erythematous eruption around the keratotic lesions. Histologically the latter showed a subacute type of inflammatory reaction in the corium, with an infiltration of lymphocytes, plasma cells, eosinophils and mast cells. The epidermis showed a well marked parakeratosis, together with a marked thickening and edema, particularly of the prickle cell layer. The condition was differentiated from psoriasis not only by the clinical findings, but also by the subacute nature of the inflammatory reaction, which showed a considerable number of plasma cells with an absence of polymorphonuclear leukocytes and micro-abscesses.

14. McCarthy, Lee: Histopathology of Skin Diseases, St. Louis, C. V. Mosby Company, 1931, p. 199.

NAEVUS UNILATERALIS COMEDONICUS

NAEVUS FOLLICULARIS KERATOSUS OF WHITE

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AND
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MINNEAPOLIS

Naevus unilateralis comedonicus is one of the rarest of the nevi and is characterized by grouped comedones unassociated with acne vulgaris. The comedones are large and occur in bands or groups which present a peculiar sievelike appearance. They are unilateral and in some cases are complicated by suppuration and scarring. We have been able to find twenty-nine cases in the literature.

REVIEW OF THE LITERATURE

In 1895, S. Kofmann [1] reported the first case, which was that of a man, aged 19. A strip of comedones extended from the superior posterior iliac spine forward and downward in a band, from 3 to 4 cm. wide; another band ran down the thigh, and a similar lesion on the outer aspect of the thigh extended to the outer condyle. The lesions had a sievelike appearance. They had been present since childhood. Biopsy was not made, but the condition was undoubtedly a unilateral nevus of the comedo type.

In 1896, Selhorst [2] reported a case under the title of "Naevus Acneiformis Unilateralis"; this report was followed in the same year by a similar one by Thibierge.[3] These two cases were practically identical, as both occurred in young women and involved the side of the neck, thorax and upper part of the arms. In both the lesions had been present since birth and appeared as large comedones forming bands, and the patients were scarred from secondary infection. Selhorst was inclined to attribute a nervous origin to the condition.

S. Mendes DaCosta [4] reported a case in a young man who had had lesions since birth. There was a lesion on the knee and a bandlike lesion on the back. DaCosta likened his case to those of Selhorst and Thibierge.

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Read before the Fifty-Fifth Annual Meeting of the American Dermatological Association, Havana, Cuba, May 3-5, 1932.

1. Kofmann, S.: Arch f. Dermat. u. Syph. **32**:177, 1895.
2. Selhorst, S. B.: Brit. J. Dermat. **8**:419 (Nov.) 1896.
3. Thibierge, G.: Ann. de dermat. et syph. **7**:1298, 1896.
4. Mendes DaCosta, S.: Brit. J. Dermat. **9**:207 (May) 1897.

M. and G. Bureau [5] reported a case in a young girl who had grouped comedones on the right side of the neck. There were about forty comedones arranged in a band.

In Bettmann's [6] case, that of a young man, the onset of the lesions was in early childhood; there had been no change until the age of 16, when suppuration occurred. The condition was extensive; there were bands of comedones on the right side of the face near the nose, a band of comedones at the angle of the jaw, several on the arms and forearms, and a triangular lesion on the breast. On the back the lesion extended in a wide area over the scapula.

In 1914, C. J. White [7] reported the first case in the United States. He named the condition naevus follicularis keratosus. A man, aged 41, had a linear lesion of the skin extending around the right side of the thorax from the angle of the scapula to the nipple, and varying in width from 1 to 1½ inches. It appeared when the patient was 10 years old, and had progressed slowly ever since. He was seen first in 1911 and again in 1913, when the lesion had grown in width and had spread into the axilla. The affected skin was a mass of widely dilated follicles, crateriform, sievelike and deeply infiltrated. White emphasized that there was no grease present, and that the follicles were not filled with ordinary sebaceous material, but that there was a hypertrophy of their keratinous lining. In his case the sebaceous glands were not involved.

MacKee and Parounagian,[8] under the title of "Folliculitis Ulerythematosa Reticulata," described two cases which, in some respects, resembled White's case histologically, but which differed markedly from it clinically. The lesions occurred bilaterally on the face; they were accompanied by erythema at first, and ended in atrophy. They were not nevi, and the condition probably could be classed with the atrophies.

In 1916, Hodara [9] reported a case in a young man who had a bandlike group of comedones on the left side of the neck, on the left scapula, on the left shoulder and over the left clavicle. They had been present since birth.

Klein [10] reported a case, that of a man, aged 20. The lesions had been present since birth and were limited to the right side of the body. Dark strips or lines were present on the arm, abdomen, back and leg. They were rough and sievelike and presented numerous comedones. An excellent illustration accompanied the article. Klein agreed with

5. Bureau, M., and Bureau, G.: Bull. Soc. franç de dermat. **14**:608, 1903.
6. Bettmann: Arch. f. Dermat. u. Syph. **80**:63, 1906.
7. White, C. J.: J. Cutan. Dis. **32**:187, 1914.
8. MacKee, G. M., and Parounagian, M. B.: J. Cutan. Dis. **36**:339 (June) 1918.
9. Hodara, M.: Dermat. Wchnschr. **63**:1219, 1916.
10. Klein, Alfred: Arch. f. Dermat. u. Syph. **124**:571, 1917.

White on naming the condition naevus follicularis keratosus, for he insisted that the so-called comedones were not real comedones of sebaceous material, but were caused by keratinization of the follicular lining. Klein referred to four cases reported by Pinkus. We were unable to obtain the article by Pinkus; we can give it only as it is abstracted by Klein.

Case 1.—A girl of 25 with left-sided, striplike group of comedones.

Case 2.—Groups and strips of comedones on the left breast of a girl of 16.

Case 3.—Comedones and brownish nodules on the left breast of a girl of 15.

Case 4.—A man aged 40 with an intercostal lesion from the sternum to the axilla.

These cases were presented by Pinkus at the seventy-ninth Versammlung deutscher Naturforscher und Arzte.

At a meeting of the Chicago Dermatological Society, on Dec. 15, 1920, Senear [11] presented a case for diagnosis. The patient was a girl, aged 3 years. About a year previous to presentation an eruption had developed on the right cheek and had persisted since that time. The eruption was peculiar because of its linear distribution. It was made up of a number of small, papular lesions, indolently inflammatory, with dilated vessels. Scattered among the papules were a number of rather large comedones. These appeared to itch slightly at times. Some scarring had resulted.

In the discussion that followed, Dr. Otto Foerster said that he thought the condition could be included in the linear group of nevi as an embryologic defect. Senear concurred with Foerster in this diagnosis.

Mayr [12] reported two cases and concluded that they were sebaceous gland nevi. The first case was that of a girl, aged 18 years, who presented a striplike lesion of the right side of the neck. The lesion was hard, but showed no inflammatory change. Many comedones were present. There were no other cutaneous abnormalities found. The condition had been present since childhood. The lesion was removed surgically; after several months new comedones appeared in the scar.

The second case was analogous to the first. A man, aged 30, presented a strip of comedones along the right side of the sternum. The condition had been present since childhood. The photograph of case 1 in Mayr's article shows that his case exactly resembled ours.

Aochi's [13] case was that of a man with a lesion on the outer side of the right leg. The skin was rough, and there were many black, follicular openings.

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11. Senear, F. E.: A Case for Diagnosis, Arch. Dermat. & Syph. **3**:450 (April) 1921.

12. Mayr, J. K.: Arch. f. Dermat. u. Syph. **141**:159, 1922.

13. Aochi, M.: Jap. Ztschr. f. Dermat. u. Urol. **23**:30, 1923.

Pautrier [14] reported a case of juvenile papulopustular acne of the trunk with two other interesting lesions, atrophic comedo-like formations in bands resembling round vegetations. The author stated that this case was similar to those of Selhorst and Thibierge. Pautrier's case does not, however, fit into the descriptions of the other cases. The patient had acne. Probably the condition was not a nevus, only grouped comedones in severe acne.

Mierowsky [15] presented a case before the Cologne Dermatological Society. It was not reported in full, and was shown as a case of a naevus unilateralis comedonicus.

Montpellier and Colonieu [16] reported a case in a young girl who had a series of linear comedones around the right scapula, extending to the right arm posteriorly in a pigmented band, with comedones in zone-like distribution.

K. Yokoyama,[17] before the Twenty-Sixth Congress of the Japanese Dermatological Association, at Tokyo, April 2, 1926, showed a patient with congenital, pigmented patches on the breast and back. Some large cysts were present. Later a single wide, pigmented strip developed from the breast to the back, in the form of a girdle, along the border of which there were numerous comedones.

Dreyer,[18] before the Cologne Dermatological Society, presented the case of a man, aged 21, who had what Dreyer called comedo nevus. There were patches of grouped comedones on both shoulders; but the case was questionable, as the condition was not unilateral.

Bloch [19] gave a short report of a case which was later reported at length by Bolle. He mentioned a similar case of Brocq and called attention to a picture in Brocq's atlas.

Brünauer [20] reported a case which he classed as a comedo nevus, but it was unusual in that it was not unilateral. The lesions appeared on both legs, in groups about the size of a dollar; the papules were brownish-black, with a comedo-like button in the center. This case is hard to classify, for it differed from the usual cases, being bilateral. There were also masses of lymphatic cells in the papillary bodies, which might be considered a granulation tissue reaction around the dilated follicles filled with horny material.

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14. Pautrier, L. M.; Metzger, and Levy, G.: Bull. Soc. franç. de dermat. **32**:87, 1925.
15. Mierowsky: Zentralbl. f. Haut- u. Geschlechtskr. **21**:399, 1926-1927.
16. Montpellier and Colonieu: Bull. Soc. franç. de dermat. **34**:181, 1927.
17. Yokoyama, K.: Zentralbl. f. Haut.- u. Geschlechtskr. **22**:69, 1927.
18. Dreyer: Zentralbl. f. Haut.- u. Geschlechtskr. **26**:33, 1928.
19. Bloch, B.: Schweiz. med. Wchnschr. **58**:1074, 1928.
20. Brünauer, S.: Dermat. Ztschr. **53**:91, 1928.

Stein,[21] before the Vienna Dermatological Society, presented a young woman who had two small nevi composed of grouped comedones. One was the size of a palm and was located on the left of the sacrum; the other was smaller and was located on the inner side of the left buttock. The giant comedones fell out easily, and gave the appearance of a sieve.

The case of Artz [22] was reported by Matras.

Bolle [23] made a more extensive study of Bloch's case, that of a girl, aged 5 years, with a history of white spots at birth. These spots later disappeared; at the age of 3 the lesions in question appeared. The right side of the face was involved, showing a group of large comedones. Brocq's case corresponded to this, as the lesion was on the chin and looked similar to the one in this case. Brocq named the condition naevus atrophique comedonien.

Bernucci [24] reported a case of achromic nevus with comedones in a youth, aged 17 years, who had a lesion on the right side of the thorax. One year before their appearance there had been lichen planus over the involved area, which disappeared after three months' treatment. There were active papules of lichen planus on other parts of the body. A bandlike lesion was present on the right side of the sternum, extending nearly to the umbilicus. The follicles were dilated and filled with bright yellow grains. This is a questionable case of follicular nevus.

Colquhoun [25] in a recent article described a case in a girl, aged 17 years. The lesions were on the upper part of the arm. No biopsy was made.

Sequira [26] mentioned a case in a girl. The lesions were located in the left scapular region, on the side of the neck and on the upper part of the arm.

Matras [27] reported two cases, one of which had been demonstrated at a meeting of the Vienna Dermatological Society by Artz. Both of his cases were in men. Lesions in the first case were on the right side of the face and had been present since birth; in the second case they were in the right lumbar region.

Fuhs [28] demonstrated before the Vienna Dermatological Society the case of a girl, aged 12, who had a lesion on the left cheek. The condition had been present since the patient was 1 year old.

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21. Stein, R. O.: Zentralbl. f. Haut.- u. Geschlechtskr. **32**:176, 1929-1930.
22. Artz, L.: Zentralbl. f. Haut.- u. Geschlechtskr. **32**:33, 1929-1930.
23. Bolle, L.: Arch. f. Dermat. u. Syph. **157**:302, 1929.
24. Bernucci, F.: Arch. ital. di dermat. **6**:26, 1930.
25. Colquhoun, K. G.: Brit. J. Dermat. **42**:55, 1930.
26. Sequira, J. H.: Diseases of the Skin, ed. 4, Philadelphia, P. Blakiston's Son & Co., 1911, p. 45.
27. Matras, A.: Dermat. Wchnschr. **90**:433, 1930.
28. Fuhs, H.: Zentralbl. f. Haut.- u. Geschlechtskr. **38**:743, 1931.

Barber [29] showed a case before the Dermatological Section of the Royal Society of Medicine. He named the condition "naevus unius lateris involving the sebaceous glands and pilosebaceous follicles."

The patient was a male, aged 18, and had a naevus involving the sebaceous glands. It extended from the mid-lateral line on the right side, about one and a half inches above the iliac crest, obliquely across the abdomen to the right scroto-inguinal fold and thence downwards along the inner side of the thigh to the level of the popliteal space. The naevus clearly involved the pilosebaceous follicles, which were dilated and plugged with comedones. At the right scroto-inguinal fold was a cyst-like formation which had been secondarily infected.

This case was undoubtedly one of naevus unilateralis comedonicus.

An analysis of these cases shows that they fall, roughly, into two groups: first, those in which the formation of comedones, follicular cysts, suppuration, fistulas, formation of abscesses and, finally, scarring occur; second, those in which the formation of comedones dominates alone, and there is no suppuration. A few of the cases which at first occurred in group two later showed suppuration.

The only reference to naevus unilateralis comedonicus that we could find in American textbooks was in the eighth edition of Sutton's [30] "Diseases of the Skin," under the name of naevus follicularis keratosus.

REPORT OF A CASE

History.—M. S., a girl, aged 8 years, reported to the skin clinic of the Minneapolis General Hospital, on Aug. 4, 1931, the complaint being a skin condition that had been present since birth. The mother stated that at the time of birth she had noticed three or four dark spots the size of hairs or pinpoints, on the neck. Since then the lesions had increased in number. The mother further stated that by applying petrolatum the dark colored plugs were softened, and that she was able to remove them by wiping. A swelling in the upper border of the lesion had been noticed by the parents only within the last six months.

The patient had had measles, mumps at 2 years of age, pertussis at 6, and scarlet fever and varicella.

The patient was the fourth child in a family of five; all the others were well and had no cutaneous abnormalities. The father and mother had no similar lesions, nor did they know of any such lesion in any member of either family.

Physical Examination.—Examination showed a well developed and well nourished girl, aged 8 years, whose general examination proved her to be normal in every respect. Except for the lesion complained of, the skin showed no marked changes from the normal, except that there were a slight thickening and dryness of the skin over the elbows and knees. There were three flat moles, each about 2 mm. in diameter, on the right side of the back. They were smooth and not elevated.

29. Barber, H. W.: Brit. J. Dermat. **43**:137 (March) 1931.

30. Sutton, A. L.: Diseases of the Skin, ed. 8, St. Louis, C. V. Mosby Company, 1931, p. 684.

The lesion for which the patient came to the clinic was the only abnormality of any note. It was a quadrangular patch looking like a group of comedones, on the left side of the neck (fig. 1). The upper border of the lesion was about 2.5 cm. below the angle of the jaw. The long diagonal line of the lesion followed the line of cleavage. The upper border of the patch was elevated above the surface more than the remainder of the lesion. On palpation this area showed a distinct mass 0.5 cm. in diameter, deep in the substance of the skin. The remainder of the area was not elevated, except for the forty black-topped comedo-like lesions, which made the area feel like a nutmeg-grater. The individual follicular openings varied in size from 1 to 3 mm. in diameter, and the follicular mouths

Fig. 1.—Close view of lesion on the side of the neck.

were neither red nor inflamed, but appeared to be retracted, giving the impression of an atrophy of these small areas. The appearance was that of a sieve with comedones pushing through the meshes. By means of a comedone extractor, the contents were fairly easily expressed; they were white, except at the tops.

Treatment.—The entire lesion was excised under local anesthesia. The scar was scarcely noticeable.

Histology.—The skin containing the lesion was excised. This tissue, oval in outline, was cut in two pieces. The lower portion of the lesion contained a cyst and was fixed in a diluted solution of formaldehyde, U. S. P. (1:10). The upper half of the lesion was fixed in a 70 per cent solution of alcohol.

The upper half of the lesion (alcohol-fixed) was serially (× 300) sectioned and studied. The sections stained with hematoxylin and eosin under low power

magnification showed dilated follicles filled with plugs of lamellated, cornified material (fig. 2). In the cutis there were solid cords of epidermal cells and cysts full of cornified material and lined with epidermal cells. On serial section it was discovered that these solid epithelial cords and epithelial-lined cysts were buds or projections from the base of the follicles.

Under high power magnification the epidermis appeared atrophied in the areas involved by the follicular changes. The epidermis consisted of a row of basal cells, two or three rows of prickle cells, a single layer of granular cells and a markedly thickened stratum corneum (hyperkeratosis). The epidermal pegs were everywhere smooth and flat. The follicles were filled with a plug of lamellated, cornified material as described in the preceding paragraph. This plug projected above the surface of the epidermis and gave to the lesion its clinical appearance. The lateral walls of the follicles were thin, but the base of the follicles remained

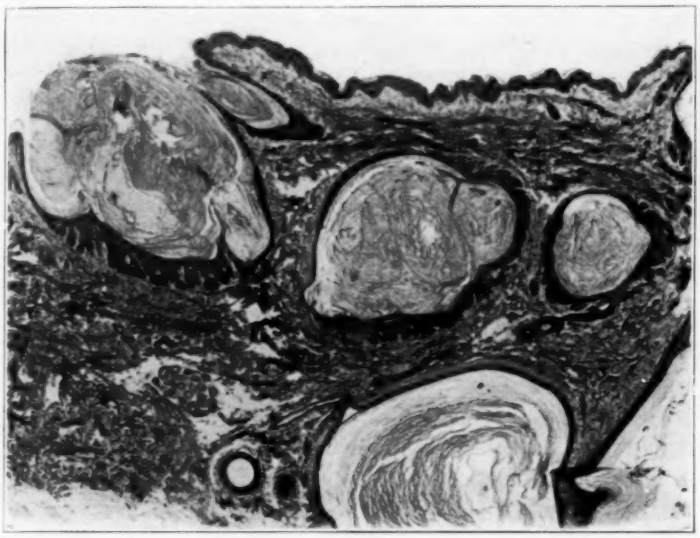

Fig. 2.—Low power photomicrograph showing follicular plugging and cyst formation.

of normal thickness or was even acanthotic, with proliferation of buds or projections. These projections were the connection between the follicle and the cords of epithelial cells and cysts described in the paragraph on low power magnification. In some of the cysts, the center of the cornified mass contained a coiled, lanugo hair. The wall of the cysts was made up of several layers of epidermal cells and was of the same thickness as the superficial epidermis.

Nowhere in the involved area could any sebaceous glands be seen, but at the border of the lesion normal follicles, with sebaceous glands much decreased in size, were to be found. In the cutis, adjacent to the follicles involved by proliferation and dilatation, one could find rudimentary hair follicles; such a follicle was made up of one or two layers of cells and a hair shaft in the center surrounded by cornified material, or it was entirely free of hair, making an empty tubule. These rudimentary follicles had no connection with the surface or the adjacent proliferated follicles.

The connective tissue retained its normal structure, and there was no infiltration in the cutis. The papillary and reticular portions of the cutis were of normal thickness, but the thickness of the individual fibers was increased. The sweat gland coils were of normal number and size.

Weigert's stain for elastic tissue showed the tissue to be normal in amount and texture. Van Gieson's stain also showed the connective tissue to be normal. No smooth muscle fibers were found in the cutis.

Frozen sections of the tissue fixed in formaldehyde were made and stained with sudan III. They showed that there were moderate accumulations of fatty material between the lamellated, cornified masses in the mouths and cysts of the dilated follicles.

The histologic deductions were entirely in keeping with the clinical diagnosis of naevus unilateralis comedonicus.

Histologically, acne is ruled out by the absence of sebaceous glands, the absence of infiltration in the cutis and the absence of sebaceous débris in the follicular plugs.

Histologically, the lesion was made up of markedly dilated follicles and cysts. Serial sections proved that the cysts arose from outgrowths or prolongations of the follicles. Sebaceous glands were absent in the sections; therefore the condition did not originate in these glands.

EMBRYOLOGY

Due to the fact that one finds in this condition proliferation of the follicle which has clinically been evident since birth, it is of interest to review briefly the embryology of the hair follicle and its appendages.

The anlage of the general hair of the body is first noticeable at the fourth fetal month.[31] Special hairs such as those of the eyebrows, upper lip, and chin have, however, been found to have beginning follicular development as early as the fortieth day (24 mm. embyro), and hairs have been found in these localities even in 30 mm. embyros. The fetal skin at the fourth fetal month consists of three layers: a continuous basal layer, a continuous peridermal layer and an intermediate layer between the other two. The first suggestion of a hair follicle is a columnar group of cells in the basal cell layer. The nuclei are perpendicularly arranged and are more closely packed than the nuclei in the adjacent basal cell layer. These cells are also higher than the regular basal cells. At this stage there are no changes in the layers above this anlage or in the cutis below it. However, the earliest stage is rarely seen and can only later be classified as a hair anlage.

The later stages, in their sequence, are: The columnar cells become crowded together, their nuclei overlap each other, and the whole area sinks into the cutis, the lower border being convex from below. The intermediate layer is richer in cells and forms a continuous layer. There

31. Pinkus, F., in Jadassohn, J.: Handbuch für Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1927, vol. 1, part 1, p. 116.

is a definite, specific structure evident in an embyro of 90 mm., an oval formation of cells with the cells forming an arc and converging toward the center, which is to become the axis, and which is not clearly noticeable as yet. At this stage it is possible to divide the follicle into an anterior and a posterior wall. As seen on longitudinal section, the anterior wall is perpendicular, forming an angle of about 90 degrees with the adjacent basal, epidermal layer. The posterior wall forms an obtuse angle, where it joins the basal layer, giving it a more oblique direction. The next stage shows definite vesicular, peridermal cells, multilayered rete and basal cells definitely columnar, which penetrate downward in the form of a solid peg. This peg is surrounded peripherally by a layer of numerous columnar, dark-staining cells which form a cone filled with irregularly arranged, epithelial cells. The cells in the lower half of the peg take a radiating arrangement with their nuclei pointing upward and inward. These cells later form the hair matrix. The columnar cells in the posterior wall of the peg become irregular and are the beginning of the off-shoots for the sebaceous glands, which are as yet not evident. Below the peg, in the cutis, there is formed a nest of cells which are the anlage for the papillae. The sebaceous gland anlage is the higher one on the posterior wall. At the time that the hair shaft pushes through the sebaceous gland anlage, the cells of the anlage differentiate and become filled with fat droplets.

The lower anlage of the posterior wall is much larger at first than the sebaceous gland anlage. Both of these anlages are at first much larger than the hair anlage, but they do not continue this relative size, and the hair anlage continues to grow and overtakes them. The lower anlage of the posterior wall becomes relatively smaller and takes on the attachment of the musculi arrectores pilorum.

The anlage of the hair canal, which belongs to a later stage, shows itself at this time by a keratohyaline formation in the superficial epidermis, above the posterior wall of the follicle.

At this stage, when the lower anlage of the posterior wall proliferates the most, the lower end of the follicle penetrates deeper and is filled with connective tissue. This tissue is a cluster of cells around the base of the follicular peg, and now forms the matrix of the hair papilla.

In certain areas (eyelids, axillae, mammae, and genitalia) there occurs at this stage another outgrowth from the posterior wall of the follicle, originating near the follicular mouth. Growing rapidly in length, it forms a tube which is the anlage for the mixed or apocrine glands.

In his text Kryle [32] calls all nevi which take a histologic structure similar to some organ hamartoma. These he classifies into homologous

32. Kryle, J.: Vorlesungen über Histobiologie der menschlichen Haut und ihrer Erkrankungen, Vienna, Julius Springer, 1925, vol. 1, p. 207.

and heterologous. Homologous hamartomas are those which resemble the mature organ from the matrix of which they develop. Heterologous hamartomas are those that do not resemble any mature organ to an extent great enough that one may definitely say that they originate from a certain embryonal matrix. Thus, sebaceous gland nevi (nevi of Pringle, sebaceous cysts and steatoma), hair follicle nevi, sweat gland nevi (hydrocystoma and cystadenoma papilliferum), myomas, neuromas and vascular nevi show definite maturity in their structure and are homologous hamartoma. On the other hand, atheroma (which is called by us a sebaceous cyst, although Kryle reserves this term for cysts the walls of which contain sebaceous glands), milia, epithelioma, adenoides cysticum (Brooke) and syringocystadenoma do not show a mature organ development and are therefore called heterologous hamartoma.

The case here reported is a combination of both types. On one hand, the homologous hamartoma is represented by the presence of mature as well as immature hair follicles. On the other hand, the heterologous hamartoma is represented by solid cords and cysts in the cutis, which do not take a form characteristic of any mature organ.

In view of the fact that there are the solid cords of epithelial cells and cysts in the cutis, we must differentiate this case histologically from epithelioma adenoides cysticum (Brooke). The differentiation clinically is easily made, but histologically there are several points in common. The presence of plugged, atrophic follicles, the absence of sebaceous glands, the connection between the follicles and the underlying cords of epithelial cells and cysts and the absence of smooth muscles of the arrectores musculi pilorum are characteristics of our case but are not, as a rule, characteristic of epithelioma adenoides cysticum (Brooke).

CONCLUSIONS

1. Naevus unilateralis comedonicus is a nevus; this title was decided on because it best fits the clinical appearance.

2. This nevus is not a sebaceous gland nevus; our case did not show any evidence of sebaceous glands.

3. Histologically, there were shown markedly dilated follicles filled with a keratinized material and many cysts which had their origin in the follicular wall.

ABSTRACT OF DISCUSSION

Dr. George M. MacKee, New York: Dr. Sweitzer mentioned a condition that was described by Dr. Parounagian and me a number of years ago. I shall discuss the differentiation between the condition that Dr. Sweitzer described and the one that we described. The condition Dr. Sweitzer described is always circumscribed

and is, from a clinical standpoint, a nevus. Folliculitis ulerythematosa reticularis may perhaps be regarded as a clinical nevus in the sense that it may belong to the congenital keratodermas. It is bilateral, symmetrical and not sharply outlined. The histology of the two conditions is similar, but the clinical picture is so different that differentiation is easy. Furthermore, folliculitis ulerythematosa reticularis disappears in time and begins in late childhood, while the condition described by Dr. Sweitzer begins early and is permanent, or so I believe.

DR. FRED WISE, New York: I exhibited a case very similar to this one several years ago. The condition has been given many names, as Dr. Sweitzer pointed out, one of which is naevus comedonicus unilateralis. The extent to which it presents itself varies enormously. Of the twenty-seven cases Dr. Sweitzer mentioned, probably not one looks much like the other. The case he depicted on his slides would probably be called an abortive type of comedo-nevus. A case like this was recently described from Bloch's clinic by Bolle. From what I read I came to the conclusion that there is no relationship clinically or histologically to folliculitis ulerythematosa reticulata as described by MacKee and Parounagian, and that the two conditions are separate entities.

A case which we have under observation but which we have not had an opportunity to study carefully, and from which we obtained a poor specimen for biopsy showed practically the same changes that we saw in Dr. Sweitzer's case. One difference is that in our case there was a great amount of hypertrophic and atrophic tissue between the comedones. A second difference is that the lesion was large and occupied the region from the spine to the shoulder blade, showing not only predominant comedones but also acne-like lesions and secondary abscesses, in the midst of the old nevus-comedo lesion.

The histology of our case showed cystic masses lined with epithelium in the corium, and at the edges of the lesion there were a few sebaceous glands, but we were unable to determine whether they took active part in the process or not. They appeared to be atrophied. As I said, not sufficient work has been done to justify any conclusion regarding the pathology.

One should not confuse lesions of this type with the condition that Dr. MacKee and Dr. Paranougian described or any other condition on the cheeks associated with atrophy, such as acne vermonlante or atrophoderma vermiculare, recently reported by Vigne, Brauer and Brünaner.

DR. FRED D. WEIDMAN, Philadelphia: The lesion on the neck in this case is reminiscent of the clustering of lesions in zoster. In describing a case of xanthoma in which the lesions were distributed as in thoracic zoster, Kreibich (*Arch f. Dermat. u. Syph.* **152**:365 [Dec. 3] 1926) advanced the thesis that stimuli emanated from sympathetic nerve roots and induced traction on hair follicles. This led to hyperplasias that had a zosteriform distribution. He cited the "acne zosteriformis" of Blaschko also as being due to nerve stimuli.

I think this peculiar condition that Dr. Sweitzer has described in children might be referred to some change early in life in the structure of the vegetative nervous system, which supplies this part of the body. One needs some such perspective to determine why a nevus should have zoster-like distribution or characters.

DR. SAMUEL SWEITZER, Minneapolis: In looking over the literature I found the case described by Dr. MacKee and, while clinically it was similar to ours, histologically they were not at all alike. Some of the recent reports of cases I did not have time to read.

As to scarring, in some of the cases, there is scarring preceded by suppuration of varying degrees.

In answer to Dr. Weidman's comment about the zoster, I saw the reference he mentioned, but did not class the condition with the nevus. It is strange that in the early cases the condition was thought to be a zoster on account of its distribution, and one of the English writers was of the same opinion. I had one reference from an Italian who thought it was a nevus. We were uncertain about that. In size these cases vary greatly. In some cases reported the condition was extensive, and in some, like Brocq's, it was limited.

CUTANEOUS SENSITIZATION TO WOOL

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Cutaneous eruptions definitely due to sensitivity to wool have been but rarely encountered in dermatological practice. Hosts of other substances have been reported from time to time as the contributing factor to various forms of skin eruptions. Four cases of undoubted sensitivity to wool and the marked benefit resulting from desensitization in the two cases in which it was employed are, I believe, sufficiently worthy of note to warrant reporting.

REPORT OF CASES

CASE 1.—A white man, aged 63, first seen June, 1926, had a condition diagnosed chronic giant urticaria, which was of four years' duration. The eruption was worse in winter than in summer, although he had never been entirely free from it since the onset. The patient had received a considerable amount of various treatments with little or no benefit. He had been tested intradermally for reaction to proteins and had reacted to several foodstuffs and to wool. Removal from his diet of the reactive food products did not alter his condition in any way. The attacks that the patient had while under observation were confined mostly to his feet; he awoke each morning with marked urticaria of the feet and legs. He also had generalized outbreaks each time he rode in his automobile. The upholstery of his car proved to be of wool, and a woolen blanket was found spread over the foot of his bed, although he did not use it during the hot weather. He was wrapped in his blanket for fifteen minutes; immediately afterward marked urticaria involving the entire body developed.

Desensitization to sheep's wool extract was started on July 16, beginning with the subcutaneous injection of 0.1 cc., 1:100 extract, the dosage being increased 0.1 cc. daily until 1 cc. of 1:100 was reached. At this point the patient was sent home, where desensitization was carried on by his family physician, who used semiweekly injections of 1:10 in increasing doses, as before. Treatment was completed on September 15. The urticaria was completely relieved by July 23, and careful follow-up revealed that he had had no further urticaria during the subsequent five years. It should be noted that the patient wore linen underwear and a linen suit while under my care and came into contact with wool in only the two instances described.

CASE 2.—A white girl, aged 16, first seen in September, 1929, had a condition diagnosed allergic eczema, involving the face, neck, bicubital and popliteal spaces. The patient had suffered from eczema since early childhood. Percutaneous tests resulted in a positive reaction to the following: tea, oysters, shad, sheep's wool, goose and duck feathers and horse dander. The positive allergens were removed from her diet and contact, and were returned one by one after the eczema had been cleared up. Goose and duck feathers and tea caused no trouble, whereas oysters and shad produced exacerbations of the eczema. Contact with horses produced a

severe asthma without cutaneous difficulty. The wearing of a woolen cuff for fifteen minutes was sufficient to produce acute exacerbation of eczema beneath the cuff, which required several weeks to control. On December 5, during an extremely cold spell, the patient wore a woolen overcoat and again a marked relapse followed. On May 5, 1930, she gave a two-plus reaction to horse dander, 1 : 100,000, and to wool, 1 : 1,000; a four-plus reaction to horse dander, 1 : 10,000, and to wool, 1 : 100. Desensitization to wool and to horse dander was started on May 7 with subcutaneous injections of 0.1 cc., sheep's wool extract, 1 : 1,000, and 0.1 cc., horse dander extract, 1 : 100,000. Injections were given three times a week from May 7 until July 21, 1930; on July 21, she received 0.1 cc. of 1 : 100 sheep's wool extract and 0.1 cc. of 1 : 1,000 horse dander extract. At this point the horse dander extract was discontinued, and she continued to receive increasing doses of wool extract until September 10, on which date 0.5 cc., 1 : 10 was given. The injections were then given at ten day intervals until Jan. 3, 1931. The dose of the last injections was 0.9 cc., 1 : 10. On Sept. 4, she was allowed to wear a woolen bathing suit, which produced no trouble of any sort. Throughout the fall and winter she wore woolen dresses with impunity. On Jan. 17, 1931, she was tested intracutaneously to sheep's wool extract, 1 : 100, 1 : 20 and 1 : 10. All results of tests were negative. On April 25, 1931, the tests were repeated and again found to give negative results. Since September, 1930, the patient has worn wool with no ill effects and has been able to ride horseback without recurrence of her asthma.

Case 3.—A white woman, aged 28, a trained nurse, first presented herself for treatment in December, 1929, complaining of acute urticaria for six weeks. Before I was called in consultation she had tried to carry on her work; later she had gone to bed at home, and finally, when first seen by me, she had been hospitalized for ten days. The usual treatment for urticaria had been carried out, including ninety-two injections of epinephrine hydrochloride, large quantities of calcium, and dietary regulation; search for a focus of infection and intradermal cutaneous tests were made. The only positive reactions were to lobsters, shad and shrimps. The patient gave a negative intradermal reaction to wool. The only agents with which she came in contact during her three modes of existence, namely, active work in the hospital as private nurse, rest at home and hospitalization, were wool and flowers. The flowers were taken from her room, with no improvement in her condition. The woolen blankets were then removed from her bed and a feather quilt substituted. Her condition cleared up immediately, and she left the hospital without permission. She removed wool from her clothing and house but two days later played with two nieces who wore sheepskin coats. Within half an hour the urticaria had recurred, accompanied by angioneurotic edema of the lip. She returned to the hospital immediately, where epinephrine again calmed her attack. The next day a cuff of wool was applied to the left wrist and a cuff of cotton to the right. Within twenty minutes a solid band of urticaria developed beneath the left cuff and generalized pruritus followed, which she scratched with both hands. Wheals developed at first only on the left side of the body where the wool cuff came in contact with her skin in scratching; they later covered her entire body. The attack was relieved by epinephrine hydrochloride. After discharge I lost sight of the patient.

Case 4.—A white woman, aged 42, first seen in March, 1930, complained of eczema of the hands, wrists, axillae and bicubital spaces of six years' duration. The patient had noticed before consulting me that wearing woolen garments or coming in contact with them always produced pruritus followed shortly after by exacerbation of the eruption. The patient gave a negative reaction to all percutaneous tests performed, except to sheep wool, to which she gave a marked reaction. The patch test for wool was positive. The reactions to silk and to cotton

were negative. Removal of wool and local treatments were successful in clearing up her eczema. On June 11, 1931, over a year after presentation for treatment, the patient had a number of superfluous hairs removed by electrolysis. The following day an acute attack of eczema developed on the palm of her left hand. She had held the wool-covered electrode in her left hand during the treatment.

COMMENT

Four cases of allergic cutaneous diseases, one of chronic giant urticaria, one of acute urticaria and two of eczema in which wool was discovered to be the causative agent, are reported. Three of the four patients gave positive reactions to intradermally administered wool extract. In all four cases an exacerbation of the eruption was produced by application of wool to the skin.

The cure of five years and one year, respectively, in the two cases in which desensitization to sheep wool extract was utilized, is also reported, with the technic employed.

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FUNGUS INFECTION OF THE FEET

FUMIGATION OF SHOES WITH FORMALDEHYDE AS A MEANS OF TREATMENT

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A recent paper in this journal discussed fumigation as an aid in the control of superficial fungus infection.[1] The following observations bear on the same point but apply to bacterial as well as to fungus infection. In addition, they indicate that shoes that have been fumigated with formaldehyde continue for many hours to fumigate the feet on which they are afterward worn. The chain of occurrences that led to the observations hereby reported was as follows:

Fifty years prior to the writing of this paper, two small boys had a series of boils on their feet. Their physician, considering that their "blood was poor," prescribed an iron tonic. In spite of this tonic, the succession of boils continued until warm weather permitted the boys to go barefoot. Then the condition cleared up.

Twenty years ago one of the boys, who by that time was an investigator in one of the medical sciences, again had boils on his feet. Instead of taking an "iron tonic" or going barefoot, he set a soap dish on the bottom of a tin box, poured 50 or 60 cc. of formaldehyde into the dish, put his shoes into the box but not into the liquid formaldehyde, closed the box and left the shoes there for two days. Afterward, he wore the shoes and had no more boils.

Recently, a college student with slightly depressed arches and a moderate fungus infection of the feet complained that his shoes had an odor. He was advised to fumigate them with formaldehyde in a tin box as previously described. The interesting result was that not only did the odor of the shoes disappear, indicating cessation of bacterial activity, but after he had fumigated several pairs of shoes and had worn them, the fungus infection on his feet cleared up.

In order to determine whether this was a real effect and not mere chance, another case has been followed. The infection was located deep between the toes. The patient was advised to keep two pairs of

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1. Ayres, S., Jr.; Anderson, N. P., and Youngblood, E. M.: Fumigation as an Aid in the Control of Superficial Fungus Infections, Arch. Dermat. & Syph. **24**:283 (Aug.) 1931.

shoes in use, each pair to be shut up in a tin box over a dish of formaldehyde when they were not being worn. On one occasion a pair of shoes was left in the box over a week-end of sixty hours, and it was observed that, even after being worn for a day, these shoes had a distinct odor of formaldehyde, indicating that leather absorbs a considerable amount of formaldehyde vapor and gives it off slowly afterward. The feet are thus continuously in an atmosphere of a low tension of formaldehyde vapor.

At the end of three weeks the infection in this patient had cleared up completely. In neither of the cases was there the slightest sign of irritation of the skin due to the low tension of formaldehyde vapor to which the feet were exposed.

CONCLUSION

When shoes are left for from eight to sixty hours in a closed tin box containing a small dish of formaldehyde, the vapor effects sterilization even at room temperature. Leather absorbs considerable amounts of formaldehyde vapor which it gives off again for many hours afterward. When shoes so treated during the night are worn during the day, a distinct amelioration or disappearance of infection of the skin may result after a time. Incidentally, the feet are also protected from reinfection from the shoes.

Abstracts from Current Literature

EDITED BY DR. HERBERT RATTNER

DERMATOMYOSITIS. S. KARELITZ and S. K. WELT, Am. J. Dis. Child. **43**:1134 (May) 1932.

The authors report two cases of dermatomyositis occurring in children, one of which terminated fatally. To date only about seventy-five cases of this disease have been reported. Twenty-two of them occurred in children, and only two of these twenty-two cases were reported in the American literature. The etiology is still obscure, but the condition is considered to be an infection or a toxemia secondary to infection. The pathology and symptomatology are reviewed together with the changes of the skin.

The cutaneous symptoms usually occur early and most frequently appear on the face. In one of the author's cases, an eruption identical to lupus erythematosus occurred on the face. Urticarial, purpuric, multiform erythematous, nodular erythematous, pemphigoid, eczematoid and scarlatiniform eruptions have been observed. The buccal mucous membranes are frequently involved.

The prognosis is usually grave; seventeen of twenty-eight patients died. It is possible that this disease precedes some of the rare muscular diseases with fibrosis or calcification. Treatment is entirely symptomatic and empiric, and for the most part consists in physical therapy, thermomassage, infra-red rays or electrotherapy being employed. The cases reported in children are reviewed.

ANDERSON, Los Angeles.

SERUM TREATMENT OF NINETEEN CASES OF ANTHRAX, INCLUDING ONE OF THE EXTERNAL, INTERNAL AND BACTEREMIC TYPE. P. F. LUCCHESI, Am. J. M. Sc. **183**:795 (June) 1932.

In the cases comprising this report the dose given intravenously was larger (150 cc.) than usual, and it was administered again after twenty-four hours, when necessary, rather than at intervals of eight hours. Serum was also injected locally in amounts varying from 30 to 50 cc. The average number of injections required was three, and the average amount of serum used was about 500 cc. The lesions should not be interfered with. All of the patients recovered. A detailed report of the external, internal and bacteremic case is given.

R. C. JAMIESON, Detroit.

SLOUGH PREVENTION IN THE INJECTION TREATMENT OF VARICOSE VEINS. HYMAN BIEGELEISEN, Am. J. Surg. **16**:441 (June) 1932.

The author incorporates methylene blue in the sclerosing solution so that the escape of any fluid into the tissues outside the vein demonstrates itself as a dark stain. He uses a syringe the tip of which contains a small bulbous dilatation which separates the contents into two chambers. The colorless sclerosing solution is contained in the lower chamber so that the aspirated blood can be readily seen. If some of the fluid escapes into the tissue, the bluish area is flooded with physiologic solution of sodium chloride. The author has successfully used this method in seventy-two cases, employing a 40 per cent solution of sodium salicylate.

RATTNER, Chicago.

DIAGNOSIS OF SYPHILITIC AORTITIS UNCOMPLICATED BY AORTIC REGURGITATION OR ANEURYSM: COMPARISON OF CLINICAL AND NECROPSY OBSERVATIONS IN ONE HUNDRED AND FIVE PATIENTS. J. E. MOORE, J. H. DANGLADE and J. C. REISINGER, Arch. Int. Med. **49**:753 (May) 1932.

In the authors' clinic, about 10 per cent of all patients with late syphilis showed evidence of cardiovascular involvement. The importance to the patient of early diagnosis in uncomplicated syphilitic aortitis is emphasized.

While necropsy evidence shows that from 80 to 90 per cent of all adults with late syphilis have pathologic evidence of aortic syphilis, only 105 cases of uncomplicated syphilitic aortitis were found post mortem at Johns Hopkins Hospital in a twenty year period, four of them being correctly diagnosed ante mortem.

Thirty-four of the patients had clinically normal hearts and aortas. Hypertension was infrequent. The Wassermann reaction was positive in 75 per cent of the cases.

The most important symptoms are roentgen evidence of aortic dilatation, increased retrosternal dulness, a history of circulatory embarrassment and a change in the tonal quality of the aortic second sound.

A diagnosis of uncomplicated syphilitic aortitis is justified in the presence of any three of the seven criteria listed.

CORRELATION OF LINGUAL CHANGES WITH OTHER CLINICAL DATA. W. H. OATWAY, JR., and W. S. MIDDLETON, Arch. Int. Med. **49**:860 (May) 1932.

Tongues were classified as normal, coated, scrotal or smooth, and a print of the tongue was made by using smoked paper. Almost all of the patients with pernicious anemia had some smoothing of the tongue. Twenty-eight per cent of the patients with complete achlorhydria had normal or coated tongues, and 18 per cent, smooth scrotal ones. In 21 per cent of the patients with hyperchlorhydria the tongue was normal; in 44 per cent it was coated, and in 23 per cent it was scrotal. In patients with normal acidity, the tongue was normal in 25 per cent, coated in 40 per cent and scrotal in 20 per cent. In 23 per cent of the patients peptic ulcer was accompanied by a coated scrotal tongue; in 68 per cent, by a coated tongue, and in only one case was the tongue normal.

TREATMENT OF CARDIOVASCULAR SYPHILIS: RESULTS OBTAINED IN FIFTY-THREE PATIENTS WITH AORTIC ANEURYSM AND IN ONE HUNDRED AND TWELVE WITH AORTIC REGURGITATION. J. E. MOORE, J. H. DANGLADE and J. C. REISINGER, Arch. Int. Med. **49**:879 (June) 1932.

This article presents the results of the study of 6,420 patients with late syphilis, of whom 53 had aortic aneurysm and 112 aortic regurgitation. It was found that syphilitic patients who were treated thoroughly early in the course of the disease were far less liable to develop cardiovascular disease than those who received little or no treatment. The incidence of cardiovascular syphilis varied according to sex and race, males being affected twice as often as females and Negroes about twice as frequently as white persons. The age incidence is about the same in all persons, the cardiovascular lesions appearing in the majority between the ages of 40 and 50, white persons becoming affected later than Negroes and males later than females.

Postmortem observations of other investigators show that in from 70 to 90 per cent of cases of syphilis there is aortic involvement; however, in 6,420 cases, cardiovascular syphilis was found in only 10 per cent. In this connection it was found that the history regarding infection was entirely negative in many cases, the average interval between known infections and cardiovascular symptoms being twenty years.

Hard labor is stated to be a factor in such aortic conditions, in many of which there were no previous symptoms or the involvement was discovered accidentally. Neurosyphilis was also found as a complicating factor in 35 per cent of the cases.

The Wassermann reaction was found to be positive in almost all cases of cardiovascular syphilis, 89 per cent of the patients having received no treatment previous to the appearance of symptoms and the remainder having received very inadequate treatment.

In the treatment of these patients, the authors emphasize the necessity for complete rest and the use of digitalis, iodides and bismuth for from two to four months before an arsenic preparation is given, with the preference then being given to neoarsphenamine and bismarsen. Arsenic, bismuth and iodides may be used in alternate courses for two years, no attention being paid to the Wassermann reaction, as in these patients the blood is usually Wassermann-fast. The figures for mortality are significant. In 79 patients who received little or no treatment, the mortality was about 90 per cent, with an average duration of life of about two years. In 40 patients who received thorough treatment, the mortality was 28 per cent, with a duration of life of six years.

From the standpoint of ability to work, the balance is greatly in favor of those who receive thorough treatment, complete incapacity being less frequent and of shorter duration.

The authors warn against the use of old arsphenamine in such types of cardiovascular syphilis, but they advise the use of neoarsphenamine, bismarsen and silver arsphenamine in patients who respond well to arsenic compounds.

R. C. JAMIESON, Detroit.

CALCIUM AND PHOSPHORUS STUDIES: V. THE COMPARATIVE EFFECTIVENESS OF VIOSTEROL AND COD LIVER OIL IN PROTECTING THE BODY AGAINST A CALCIUM DEFICIENCY IN THE DIET. D. H. SHELLING and DOROTHY E. ASHER, Bull. Johns Hopkins Hosp. **50**:344 (May) 1932.

Incidental to other findings in experimental work on calcium deficiency in rats were the effects on the hair. In the groups receiving a diet very low in calcium, the growth of hair was exceedingly poor. Some of the animals lost their long hair and were covered with a coat of thin, short, fuzzy hair; others lost their hair in areas, most frequently around the abdomen and extremities. The loss of hair was more marked in animals that were fed diets low in calcium containing no vitamin "D" and in groups failing to grow. The loss or hair was less noticeable in the groups receiving added calcium in their diets, and nearly absent in those receiving added calcium and vitamin "D."

SYSTEMIC BLASTOMYCOSIS. THEODORE S. RAIFORD, Bull. Johns Hopkins Hosp. **51**:61 (Aug.) 1932.

This is the report of a case of systemic blastomycosis in which there was primary and widespread involvement of the bones. The first lesion appeared on the nose, and was rapidly followed by a lesion on the left shin and one near the right nipple. Roentgenograms revealed lesions in the skull, right hand, right foot, left ankle and left elbow. The diagnosis was confirmed by the observation of blastomycetes in the pus from the cranial lesion. No fungi were isolated from the sputum. Treatment consisted of the administration of increasing doses of potassium iodide, to which the patient was intolerant, ethyl iodide given by inhalations and gentian violet given intravenously. Although the patient improved temporarily, death occurred a little more than two years after the initial onset of symptoms, which were influenzal.

TICK BITE FEVER IN CHILDREN. P. G. SHIPLEY, Bull. Johns Hopkins Hosp. **51**:83 (Aug.) 1932.

This is an excellent article on tick bite fever, relating particularly to that type observed on the eastern coast as compared to Rocky Mountain spotted fever. The

author reports six cases of the eastern coast type of tick fever, all in Maryland children. The incubation period is short, being four days in one case. There are two types of the disease, a mild and a severe form. The site of inoculation may be marked by a small ulcer that bleeds easily on examination, and there may be marked enlargement of the regional lymph nodes draining the ulcer. The eruption appears from the third to the fifth day and is at first rose-colored and macular. It occurs at first on the extremities, involves the palms and soles and spreads centripetally until the entire body is involved. It is most marked on the extensor surfaces and areas of pressure, such as the shoulder and buttocks. The face is not involved. As the disease progresses the rash becomes hemorrhagic, and the individual elements tend to coalesce. It persists after defervesence, and finally is followed by a fine scaly desquamation. There is an equivalent enanthem on the buccal membranes and throat.

Three of the patients later shown to be nonsyphilitic gave positive Wassermann reactions. No specific treatment is known; the prognosis is good in children but becomes more unfavorable with adults.

Occult Syphilis—A Neglected Factor in Diagnosis and Treatment. Udo J. Wile, Bull. Johns Hopkins Hosp. **51**:102 (Aug.) 1932.

This article consists of comments and reflections on certain aspects of syphilis. Occult syphilis is defined by Wile "as that form of infection, the lesion of which does not reach the clinical horizon" or "the subclinical manifestations of the disease." In many instances, such subclinical manifestations of syphilis constitute the major part of the diseased processes and may be the outstanding factor in a given case. He points out that such occult manifestations, including both the early and the late stages of the disease, are more common in women. Also in many women the only manifestation for years may be a positive Wassermann reaction. The common involvement of the male gonads and the nearly absolute immunity of the ovaries is mentioned, as is also the greater degree of immunity during the pregnant state as compared to the nonpregnant one.

Regarding occult syphilis as a factor in systemic disease, the question always arises as to whether the syphilis is casual or causal. This occurs particularly in cases of syphilis with gastric or hepatic disease, splenic anemia, hyperthyroidism and aortic regurgitation. Occult syphilis is a factor of major importance in the development of carcinoma involving squamous epithelium, such as the tongue and the oral mucosae, the cervix and the vulva. Cases of syphilis thyroiditis are coincident with the onset of early syphilis but clear promptly under antisyphilitic therapy.

The occult syphilitic lesions in patients presenting late clinical sequelae are dealt with, and Wile cautions against regarding any case as involving an individual system alone, as, for example, the nervous system, the eye or the cardiovascular system. As a matter of fact "every patient with late sequelae presents a complex picture with clinical lesions as the striking feature and subclinical or occult lesions in remote portions of the body as associated factors greatly influencing prognosis and treatment."

Hence, syphilis is a disease not only impossible but undesirable of therapeutic standardization.

Anderson, Los Angeles.

Leg Ulcers of Unrecognized Etiology. Norman J. Kilbourne, J. A. M. A. **98**:1955 (June 4) 1932.

This is a clinical report of 150 cases of ulcers of the leg. The majority were due to ordinary varicose veins or to syphilis. The author emphasizes deep invisible varicose veins as a frequent cause of ulcer of the leg, and he demonstrates these varices by the intravenous injection of iopax. Other etiologic factors in this series were arteriosclerosis, hypothyroidism, anemias, gluttony, tuberculosis, fungous infection, drugs, trophic disturbances and malignancy.

PULMONARY SYPHILIS. ADOLPH HARTUNG and JOHN FREEDMAN, J. A. M. A. **98**:1969 (June 4) 1932.

The authors report three cases of acquired syphilis of the lungs in adults in whom the response to therapy was checked by frequent roentgenograms of the chest. In two patients all symptoms and the nodular infiltrations of the lungs disappeared following antisyphilitic treatment. The third patient died of cardiac decompensation following atelectasis of the right lung, and the postmortem examination of the lungs showed changes which were probably sequelae of syphilis. The authors conclude that diagnosis of pulmonary syphilis should be made only by exclusion, by therapeutic test checked by roentgen examinations and, when possible, by anatomic confirmation.

PIGMENTATION OF FACE AND NECK DUE TO FRECKLE CREAM. J. B. BLASHILL, J. A. M. A. **98**:2200 (June 18) 1932.

In a woman a slate gray pigmentation of the face and neck developed after daily application of "Othine Double Strength" for about six months.

HEALING OF A COCCIDIOIDAL GRANULOMA LESION FOLLOWING MEDICINAL THERAPY. HOWARD A. BALL, J. A. M. A. **98**:2279 (June 25) 1932.

The author reports a case of coccidioidal granuloma with a single ulcerated lesion on the forehead in which healing occurred within six months as a result of iodine therapy. Saturated solution of sodium iodide was administered in the dose of 25 minims (1.5 cc.) three times a day, and local applications of a saturated solution of iodide in a 5 per cent aqueous solution of potassium iodide were given.

DERMATITIS VENENATA: REPORT OF A CASE DUE TO SHOE LEATHER. NELSON P. ANDERSON and SAMUEL AYRES, JR., J. A. M. A. **99**:25 (July 2) 1932.

A dermatitis of both feet developed every time the patient wore a certain new pair of black shoes. No fungi were found. The etiology was established by a positive patch test performed with a piece of the leather on the forearm and was confirmed by the disappearance of the dermatitis when the shoes were discarded.

HERPES ZOSTER AND TUBERCULOSIS OF THE SPINE. THEODORE ROSENTHAL, J. A. M. A. **99**:213 (July 16) 1932.

The author reviews the literature on the relationship between tuberculosis and zoster, and reports the case of a white woman, aged 46, in whom herpes zoster developed on the left side of the chest at a level corresponding to the seventh dorsal dermatome. Sixteen months later she complained of a recurrent pain in the same area, and roentgenologic examination showed tuberculous caries of the vertebrae of the corresponding level.

DERMATITIS VENENATA DUE TO DEERSKIN GLOVES. HOWARD J. PARKHURST, J. A. M. A. **99**:301 (July 23) 1932.

Acute dermatitis of both hands developed every time the patient wore a pair of deerskin gloves. A patch test with a moistened piece of tanned undyed deerskin gave strongly positive results, while control tests with two other leathers gave negative results. The dermatitis subsided when the gloves were discarded.

CARO, Chicago.

SPOROTRICHOSIS: ITS TRANSMISSION TO PLANTS AND ANIMALS. RHODA W. BENHAM and BEATRICE KESTEN, J. Infect. Dis. **50**:437 (May-June) 1932.

The authors inoculated monkeys with Sporotrichum schenckii and succeeded in producing a nodular sporotrichosis simulating the lymphangitic type of infection in man. They also succeeded in causing a bud rot in carnations by transmitting the organism from a human being. They found that Sporotrichum schenckii retains its virulence for animals after living saprophytically or parasitically in plants.

SOLUBLE SPECIFIC SUBSTANCES FROM YEASTLIKE FUNGI. H. D. KESTEN and E. MOTT, J. Infect. Dis. **50**:459 (May-June) 1932.

The authors consider several tested species of yeastlike fungi as merely strains of a single species, Monilia albicans. They arrived at their conclusions by preparing a soluble polysaccharide from a number of yeastlike fungi. They found that antiserums prepared against these fungi caused precipitation in high dilutions of the homologous soluble substances, and that, in addition, cross-precipitant reactions are common. Saccharomyces, Willia and M. parapsilosis are distinct among themselves and also from the remainder of those studied. M. albicans, M. psilosis and Endomyces albicans, however, are serologically similar.

NONSPECIFIC ORCHITIS AND KERATITIS IN EXPERIMENTAL SYPHILIS. E. E. ECKER and L. A. WEED, J. Infect. Dis. **50**:484 (May-June) 1932.

The authors were engaged in making transfers of testicular tissues containing Spirochaeta pallida from rabbit to rabbit. They found that a spontaneous orchitis caused by B. proteus (H type) occurred. In some animals S. pallida coexisted with B. proteus. Serums of infected rabbits agglutinated the proteus organisms in high dilutions. The histologic picture was not that of syphilis. Noguchi's hope that serial passages of syphilitic tissue from human beings to testes of rabbits would produce pure cultures of S. pallida is not readily attained. The authors urge caution in the interpretation of results obtained with the so-called pure cultures of S. pallida.

CORNBLEET, Chicago.

THE INFECTION OF STRATIFIED EPITHELIUM IN LEPROSY. E. MUIR and S. N. CHATTERJI, Indian J. M. Research **19**:1163 (April) 1932.

In the case here reported, the patient was treated primarily as ichthyosis until an anesthetic patch was found on one foot. Clip-smears from different areas of the body showed Hansen's bacilli in abundance, especially in the superficial layers of the corium and in and around the capillaries. An infiltration of small cells was present around the blood vessels, together with some large epithelioid cells. Large, round clumps of lepra bacilli were found in the malpighian layer, and flattened clumps lay between the flattened epithelial layers and inside the loose scales of the surface. Scrapings of superficial scales showed the organism. Other patients have given similar findings. It should be recognized that in some cases lepra bacilli may be shed from the surface of the skin or be contained within the epithelial scales.

EXPERIMENTS ON THE PROTECTION OF MONKEYS WITH ANTI-VACCINIAL SERUM AGAINST THE VIRUSES OF VACCINIA AND VARIOLA. C. G. PANDIT, K. P. MENON and MAHAMAD OMAR SAHIB, Indian J. M. Research **19**:1185 (April) 1932.

Monkeys injected with antivaccinial serum obtained from hyperimmunized buffaloes were protected to a considerable extent against the viruses of vaccinia and variola when the serum was injected along with the virus. The course of vaccination varied when the serum was given at longer intervals, but considerable

protection was afforded in variola. Serum from patients convalescing from smallpox gave greater protection than serum from immunized buffaloes.

A Copper-Colored Variety of Caraate. V. Puntoni and E. J. Pampana, J. Trop. Med. **35**:154 (May 16) 1932.

In the case reported (Colombian), the patient had brownish, coppery hyperpigmented lesions on the forearms, wrists and hands. The etiologic fungus was identified as Tricophyton megnini, Blanchard, 1895.

R. C. Jamieson, Detroit.

The Bubo of Chancroid and of Nicolas-Favre Disease. P. Rabaut and R. Cachera, Ann. de dermat. et syph. **3**:97 (Feb.) 1932.

The results of experimental efforts in a comparative investigation of the adenitis of chancroid and of lymphogranulomatosis inguinalis, including bacteriologic and immunologic research, together with a clinical and therapeutic study, are recorded in this article.

Gandy, Houston, Texas.

The Rule of Eight Months and Its Practical Applications. G. Martin and M. Leger, Arch. Inst. prophylac. **4**:21, 1932.

The authors belong to those who believe in the curability of syphilis and are against the treatment of syphilis throughout life. With the help of the photometer of Vernes, Brieg and Yvon, which permits the direct observation of the flocculation produced in syphilitic blood, the "eight months rule" is able to decide whether further antisyphilitic treatment is necessary. The patient is given three injections of neoarsphenamine in doses 0.15, 0.3 and 0.45 Gm., and the blood is then examined once a month for eight months. When the patient has no syphilis or has been cured, the photometric degree at all examinations will be zero. Also the spinal fluid must be negative in every respect when examined eight months after the provocative injections of arsphenamine. The patient is then advised against any further antisyphilitic treatment.

Bloom, New York.

Bowen's Disease. A. Touraine, P. Renault and L. Gole, Bull. Soc. franç. de dermat. et syph. **39**:368 (March) 1932.

A woman, aged 69, sought advice concerning a lesion in the right flank, which proved to be a typical plaque of Bowen's disease. It had begun about three years previously as a senile wart; this wart had received many insults — friction of clothing, frequent application of tincture of iodine, etc.— and the lesion presented gradually evolved. The rôle of local irritations in abetting bowenian transformation has been frequently mentioned in the reports of other cases.

Epithelioma Supervening on Leukoplakia in a Syphilitic Patient. A. Touraine and P. Renault, Bull. Soc. franç. de dermat. et syph. **39**:371 (March) 1932.

The evolution of leukoplakia of the vulva into cancer and, likewise, the syphilitic origin of leukoplakia are well known. But to find in one patient the sequence of initial syphilis, followed by the precancerous leukoplakic state, followed by typical epithelioma, is unusual. Such a case is here recorded.

Hypertrophic Cicatrices Consecutive to Herpes Zoster. Sézary, Horowitz and Lévy-Coblentz, Bull. Soc. franç. de dermat. et syph. **39**:379 (March) 1932.

A young man presented several hypertrophic scars in a site on the chest that had been attacked by herpes zoster many years previously. A clinical diagnosis

of keloids was made, but biopsy did not reveal the typical structure, so that pseudo-keloids was the best name that could be applied to these peculiar lesions.

CHANCRE OF THE EYEBROW. MILIAN and BAUSSAN, Bull. Soc. franç. de dermat. et syph. **39**:384 (March) 1932.

A chancre located at the end of the left eyebrow in a man 56 years of age, the mode of infection being obscure, is reported. Two instances of chancre of the back and one of chancre of the heel are cited by discussers.

LEUKOPLAKIA AND EPITHELIOMA IN A CONGENITALLY SYPHILITIC PATIENT. MILIAN and PERIN, Bull. Soc. franç. de dermat. et syph. **39**:390 (March) 1932.

This case is similar to the one previously recorded except that the patient had congenital syphilis instead of acquired syphilis. A rapidly growing prickle cell epithelioma developed at the site of a leukoplakia of the vulva.

PURPURA DUE TO GOLD COMPOUNDS. J. NICOLAS, F. LEBEUF and J. CHARPY, Bull. Soc. franç. de dermat. et syph. (Réunion dermat. de Lyon) **39**:328 (March) 1932.

A patient with psoriasis was given small doses of gold sodium thiosulphate, and a petechial, purpuric eruption developed on the extremities, accompanied by epistaxis, which disappeared when the drug was discontinued. The appearance of this auride following the administration of small doses of the gold preparation proved it to be a phenomenon of intolerance and not of intoxication.

PIGMENTARY AND NERVE SYPHILIS. R. FERRABONC, E. FRIESS and A. ROLLAND, Bull. Soc. franç. de dermat. et syph. (Réunion dermat. de Lyon) **39**:339 (March) 1932.

The well known coexistence of pigmentary syphilis and neurologic signs is demonstrated in two patients.

GANDY, Houston, Texas.

TREATMENT OF OCULAR LEPROSY WITH GOLD COMPOUNDS. W. H. HOFFMANN, Rev. cubana de oto-neuro-oftal. **1**:17 (Jan.-Feb.) 1932.

After reference to the employment of gold salts in tuberculosis and other infectious processes and to the progress made in the manufacture of organic gold salts, the author details his experience in cases of leprosy in which he has had extraordinary success, especially in connection with the ocular lesions.

FINLAY, Havana, Cuba. [ARCH. OPHTH.]

THE INCREASE OF THE BLOOD SUGAR IN DERMATOSES: A CRITICAL REVIEW. WILHELM MILBRADT, Dermat. Wchnschr. **94**:465 (April 2) 1932.

From his own experience and a review of the literature, Milbradt concludes that the hyperglycemia which occurs at times in allergic dermatoses may be a protective reaction. This is analogous to the hyperglycemia that occurs in anaphylactic shock and may be an attempt at regulating the hydrogen ion concentration of the tissues.

ARE GUMMAS OF THE SKIN WHICH OCCUR FOLLOWING MALARIA TREATMENT TO BE CONSIDERED AN ARGUMENT AGAINST FEVER THERAPY? AUGUST MATRAS, Dermat. Wchnschr. **94**:471 (April 2) 1932.

The author reports a case of syphilis in which treatment with malaria was instituted early on account of a positive reaction of the spinal fluid. The woman

was seen three and one-half years later, when she presented gummatous ulceration of the legs and a syphilitic periostitis. Several cases are cited from the literature in which tertiary lesions of the skin occurred after similar treatment. The number of cases in which this has occurred suggests that it may be a contraindication to treatment with malaria.

LIPOID METABOLISM IN PSORIASIS. SCHREINER and BILGER, Dermat. Wchnschr. **94**:505 (April 9) 1932.

On investigation of the blood of ten patients with psoriasis, the values for lecithin and cholesterol were each found to be within normal limits. The lipoid quotient, the proportion between lecithin and cholesterol, was definitely lower than in normal persons. The injection of lecithin raised the lipoid quotient, and apparently the psoriatic condition was improved in the twenty-five cases in which this treatment was tried.

SEVERE VERRUCOSE CHANGES OF THE SKIN AS A RESULT OF PARAFFIN TREATMENT. DESIDERIUS STEIGER-KAZAL, Dermat. Wchnschr. **94**:511 (April 9) 1932.

A benzine burn on the arm was treated by the application of a paraffin spray. A verrucose dermatitis clinically resembling verrucose tuberculosis of the skin developed. It is well known that impure tar products cause various types of changes of the skin, but it is rare for a chemically pure preparation, such as the one used in this instance, to cause a dermatitis.

TEMPORARY AND PERMANENT ALOPECIA FOLLOWING ROENTGEN RADIATION. W. MEMORSKI, Dermat. Wchnschr. **94**:513 (April 9) 1932.

The author reports the occurrence of temporary alopecia in two adults following roentgen examinations of the sinuses. In a third case, a girl, aged 3 years, had total alopecia. There was no evidence of dystrophy of the internal glands or of a hereditary taint. The author concludes that the alopecia was due to the roentgen examination made of the renal region of the mother in the sixth month of her pregnancy.

REACTION OF THE SPINAL FLUID IN LEUKODERMA AND ALOPECIA SPECIFICA. JOSEF KONRAD, Dermat. Wchnschr. **94**:515 (April 9) 1932.

The Wassermann reaction of the spinal fluid was investigated in two hundred cases of syphilitic leukoderma and alopecia on account of the general impression that early involvement of the nerves usually occurred when these manifestations were present. Strongly positive reaction were found in 22 per cent of the cases and weakly positive reactions, in 17 per cent. This would indicate that involvement of the nerves is not particularly common when leukoderma and alopecia occur in early syphilis.

BASALIOMA (CUTIS) SUPERFICIALE PLANUM AND ITS RELATION TO BOWEN'S DISEASE. L. N. MASCHKILLEISSON and L. A. NERADOFF, Dermat. Wchnschr. **94**:533 (April 16) 1932.

Under this name the authors report three cases of epithelioma erythematodes benignum of Little. Two of the three patients gave a history of cancer in the family. The histologic observations are described, and the differential diagnosis is discussed, especially that between Bowen's disease and this condition. The authors point out that clinical differentiation between the two is at times impossible, but that the microscopic appearance is quite different. Bowen's disease is an intradermal epithelioma with profound changes in the epidermis, which eventually may spread to become an invading epithelioma, usually of the squamous cell type,

which is often dyskeratotic. The basalioma superficially shows budding off of masses of basal cells with little change in the epidermis. The condition is probably nevoid in origin in that a preexisting anlage is necessary for its development.

A Case of Bullous Impetigo with Scarlet Fever. Harold Lotze, Dermat. Wchnschr. **94**:547 (April 16) 1932.

In an 11 year old boy an infection of the middle ear developed following an attack of influenza. Hemolytic streptococci were isolated from the discharge. While the ear was still draining, scarlet fever developed with a typical strawberry condition of the tongue. Scarlet fever serum was given, and a pruritic serum rash developed. All of the areas were scratched, and severe bullous impetigo appeared, which ran a stormy course for several weeks, leaving depigmented, slightly atrophic scars. Hemolytic streptococci as well as staphylococci were recovered from the impetigo lesions.

Is There a Change of Form of Spirochetes? Hans Hirsch, Dermat. Wchnschr. **94**:551 (April 16) 1932.

The author made dark-field examinations on serum obtained from previously treated chancres in two persons. In both instances, he found an atypical organism consisting of a filament half the length of the ordinary Spirochaeta pallida, with nodular swellings at each end. In one instance, normal spirochetes were seen the next day, following applications of physiologic solution of sodium chloride. In the other case, subsequent examination was not practical, and antisyphilitic therapy was given, with prompt clearing of the lesion. The author considers these organisms to be a form of Spirochaeta pallida.

Soluble or Insoluble Bismuth Salts? Hans Schmitt, Dermat. Wchnschr. **94**:552 (April 16) 1932.

An oil emulsion of an insoluble bismuth salt is preferred on account of its slow continuous action due to the setting up of depots. The action of bismuth is indirect, and hence slow absorption is of greater value than the rapid absorption desirable in the case of arsphenamine, which acts directly on the spirochete. Furthermore, the factor of safety is much greater with an insoluble salt than with preparations that are soluble in water or oil.

Studies Concerning the Finding of Arsenic in Secretions and in the Appendages of the Skin. L. Schwarz, Dermat. Wchnschr. **94**:577 (April 23) 1932.

The normal arsenic content of the urine shows marked daily variations. As much as 100 micromilligrams of arsenic to the liter was found in normal persons. The normal content of the stool was as high as 80 micromilligrams per hundred grams of fresh material. The hair and nails were found to contain arsenic, though this was not true of all persons. Persons who work with arsenic inhale the chemical in large quantities and may excrete as much as 1,000 micromilligrams per liter of urine, though the increase in the feces is not so marked. The amount found in the appendages may be quite high. Arsenic administered orally also showed a predominant excretion in the urine.

The Culture of Tubercle Bacilli from the Blood and Tissue in Tuberculosis of the Skin. Oswald Grimm, Dermat. Wchnschr. **94**:584 (April 23) 1932.

Following the technic of Loewenstein, the author took cultures of the blood of 36 patients (144 cultures), 18 of whom had tuberculosis or a tuberculid of the skin. Not a single positive culture was obtained, and Grimm concludes that Loewenstein's method is not so simple and certain as it was represented to be.

CONTRIBUTION TO THE KNOWLEDGE OF THE SO-CALLED MILKER'S NODES. A. SENIN, Dermat. Wchnschr. **94**:605 (April 30) 1932.

In the course of less than three months, four women were seen with "milker's nodes." They were from different parts of the country and were not related or known to one another. In each instance the woman had milked a cow which shortly before had suffered from a tender, crusted eruption of the udders. The incubation period was from eight to twelve days. In one case the strongyloplasma paravaccine bodies of Lipschütz were observed. The histologic observations were not those of lesions of vaccinia, and there was no immunity to vaccinia. The condition is due to a paravaccine rather than to the vaccinia.

REMARKS ON THE ARTICLE OF BOAS AND TÖLBÖLL: "CAN AN INJECTION OF DIPHTHERIA SERUM CAUSE A POSITIVE SERUM REACTION IN A NON-SYPHILITIC?" Dermat. Wchnschr. **94**:123, 1932. H. LÖHE and H. ROSENFELD, Dermat. Wchnschr. **94**:616 (April 30) 1932.

The authors point out that they reported a case in which a positive Wassermann reaction was called forth by the injection of diphtheria serum. The positive reaction remained for three months and disappeared spontaneously (*Dermat. Ztschr.* **53**:373, 1932).

NEW RESEARCHES IN NUTRITION. B. C. P. JANSEN, Dermat. Wchnschr. **94**:638 (May 7) 1932.

This is a brief review of the present status of our knowledge of vitamins. The nomenclature of the English vitamin commission is used: A is the anti-xerophthalmic vitamin. B_1 is antiberiberi or antineuritic vitamin. B_2 is anti-pellagrous. C is antiscorbutic. D is antirachitic. E is the fertility vitamin.

The author concludes that the average diet in western Europe contains all of these vitamins in sufficient quantity, with the exception of vitamin D. It is likely that there is an optimum amount which is higher than that necessary to prevent clinical evidence of avitaminosis, and if this is true, it is likely that the vitamin A content of the diet should be increased.

THE TREATMENT OF GRANULOMA ANNULARE WITH GRENZ RAYS. P. HESS, Dermat. Wchnschr. **94**:643 (May 7) 1932.

Two patients with granuloma annulare were treated with long wave roentgen rays. It was found that 1,200 roentgens as measured by a Hammer dosimeter with the "soft ray" ionization chamber was sufficient to clear the condition in one treatment. An erythematous reaction developed with subsequent pigmentation.

A CASE OF AN ISOLATED GUMMA OF THE ACCESSORY PAROTID GLAND. ERNEST FEILCHENFELD, Dermat. Wchnschr. **94**:644 (May 7) 1932.

Syphilis of the salivary glands is rare. No case has been reported in which the accessory parotid was involved. A woman, 39 years of age, presented a tumor of six months' duration located deep in the cheek about 2 cm. below the zygomatic arch. The skin was red, and a small sinus opened into it. There were no symptoms of a disturbance of function of the salivary glands. The Wassermann and other tests of the blood gave strongly positive reactions, and the tumor cleared under antisyphilitic therapy.

THE SO-CALLED TINEA AMIANTACEA OF ALIBERT (KERATOSIS FOLLICULARIS AMIANTACEA KIESS). B. JOSSEL, Dermat. Wchnschr. **94**:677 (May 14) 1932.

The author studied two cases of this disorder and reports the histologic observations in each. Sections showed funnel-shaped enlarged follicle openings with a lamellar hyperkeratosis without parakeratosis. The sebaceous glands were

absent, though the sweat glands were unaltered. There was a perivascular lymphocytic infiltration. Jossel agrees with Kiess and others that the term keratosis follicularis amiantacea is more descriptive than Alibert's original name.

EXPERIENCES WITH THE "PALLIDA REACTION." H. HEINEMANN, Dermat. Wchnschr. **94**:680 (May 14) 1932.

The pallida reaction is the Wassermann test performed with an antigen which is an extract of spirochetes. The author, working in Sumatra, discusses the limitations of the Wassermann and other tests in the tropics on account of the prevalence of malaria, frambesia and leprosy. He investigated the comparative specificity of the classic Wassermann, Meinicke, Müller and pallida tests in 1,015 serums. He concludes that the latter is somewhat more specific, but that it does not supplant careful clinical study of the individual cases, as it may be positive also in malaria, frambesia and leprosy.

A CASE OF IDIOPATHIC MULTIPLE HEMORRHAGIC SARCOMA OF KAPOSI AND ITS TREATMENT WITH THE ROENTGEN RAY. K. SCHIRMUNSKAJA and K. TSCHOTSCHIA, Dermat. Wchnschr. **94**:705 (May 21) 1932.

A man, 22 years of age, had had a typical Kaposi sarcoma for five years. The hands, feet, legs and forearms were the sites of nodular and macular lesions, and there was a lobulated tumor in the nasopharynx. Histologic examination of material from this tumor, as well as from the lesions of the skin, showed the typical pathologic changes. Relatively small doses of roentgen rays were used, from one third to one half an erythema dose through a filter of 0.5 mm. of zinc and 3 mm. of aluminum, with considerable improvement. The authors do not consider this condition a malignant neoplasm in the strict sense on account of its relatively benign course, and they believe it to be neurovascular in origin. Roentgen irradiation is the only useful form of therapy.

ICHTHYOSIS AS A RESULT OF ENDOCRINE DISTURBANCE. HUBERT SIEBEN, Dermat. Wchnschr. **94**:710 (May 21) 1932.

The author reports two cases of rather severe ichthyosis associated with mild cretinism which were markedly influenced by thyroid therapy.

THE SKIN CHANGES CAUSED BY CONTACT WITH HIGH TENSION ELECTRICAL CURRENTS. G. NOBL and W. LOWENFELD, Dermat. Ztschr. **63**:377 (May) 1932.

The patient came in contact with 16,000 volts. Necrosis occurred at the point of entry of the current on the hand. This was due to the burn by the electric arc. On each foot was a perforated lesion marking the exit of the current. The relatively slight general symptoms were explained by the poor contact and an individual resistance to electricity. The proper treatment for such electrical burns consists in the minimum of interference, as the necrotic areas tend to heal spontaneously with slight scarring.

TAUSSIG, San Francisco.

THE INFLUENCE OF EXTERNAL FACTORS ON SYPHILITIC ERUPTIONS. F. FRENZL, Česká dermat. **12**:369 (Dec.) 1931.

A young woman presented a preponderance of syphilitic lesions on areas of the skin that were previously badly sunburned. The author cites similar cases from the literature showing accentuation of the eruption from external causes and also some examples of the opposite effect, an attenuation of the eruption from the same causes. He reasons that a mild dose of a given artificial stimulus may increase the nutrition and the vitality of the skin and thus prevent the development of the lesions. In larger doses the same agent may decrease vitality of the skin and lower the resistance.

BIOCHEMICAL TESTS IN ECZEMA. JAN TRÉGER, Česká dermat. **13**:1 (Jan.) 1932.

The protein content of blisters produced by carbon dioxide snow on eczematous areas is high, almost equal to that of the patient's blood serum. The content of blisters produced by the same method on the normal skin in the same person shows values only half as high. The blistering time and coagulation time also differ. On eczematous areas the blister appears within two or three hours, and the fluid coagulates within from three to five minutes. On normal skin the appearance of the blister is often delayed until the next day or follows only repeated application of carbon dioxide. The fluid content remains uncoagulated for hours. While these differences are most marked in cases of acute weeping eczema, they were also demonstrated in chronic dry eczema. They indicate a change in the permeability of capillaries in eczema.

ANOMALIES IN DEVELOPMENT OF HAIR AFTER EPILATION. VLASTA ŘIHOVÁ, Česká dermat. **13**:33 (Feb.) 1932.

Cases of hypertrychosis in women systematically epilated show at times in the terminal stages of treatment a growth of unusual short, stout, lusterless, coal black hairs, so peculiar that they can be distinguished even among black hair. They are easily removed with tweezers and usually fall out spontaneously. The author considers them as end-results of the regenerative power of epithelial cells to produce new hair. She gives detailed descriptions of microscopic observations and presents photomicrographs of sections.

THE SOURCE OF PROTEIN IN PEMPHIGUS BLISTERS. JAN TRÉGER, Česká dermat. **13**:40 (Feb.) 1932.

Having previously studied the value of the protein content in pemphigus, the author wished to determine whether the protein in spontaneous and artificially produced blisters was of the same origin. In his experiments he made use of trypan red, as that dye has the same dialyzing properties as blood protein and passes through the walls of blood capillaries only when the blood protein does. After intravenous injection, the trypan red was recovered from spontaneous pemphigus blisters, from those produced by carbon dioxide snow on apparently normal skin in patients with pemphigus and also from blisters produced in the same way in normal persons. The presence of trypan red was proved macroscopically, spectroscopically and chemically. The findings indicate that the protein of the blisters is derived from blood serum via the walls of damaged capillaries of the skin.

The behavior of trypan red was also studied in a case of chronic nephritis. It appeared in the urine only in cases of albuminuria. It was never found in the urine of normal persons.

SPINKA, Texarkana, Texas.

Society Transactions

BROOKLYN DERMATOLOGICAL SOCIETY

A. M. PERSKY, M.D., *Secretary*

Feb. 16, 1932

B. B. BERKOWITZ, M.D., *President, in the Chair*

A CASE FOR DIAGNOSIS (PEMPHIGUS?). Presented by DR. A. WALZER.

M. S., a man, aged 42, married, a junk-dealer with a history of no importance, had a condition that began on the face about one and one-half years previous to presentation and gradually spread to the scalp and the trunk. The patient had been under observation at intervals for about a year. The primary lesion was a pinhead-sized, tense, clear vesicle on an erythematous surface; it increased in size, broke and either formed a crust or left a raw surface. In many instances, however, the vesicle increased in size by peripheral extension, forming annular lesions with depressed moist or crusted centers. The borders were composed of small vesicles or were elevated and red.

When presented, the patient showed none of these lesions. The forehead, the cheeks, the chest and the back (chiefly the region of the spine) were covered with groups of lesions and scattered crusted and erythematous patches ranging in size from that of a split pea to that of a dime. Practically no new lesions were present. Nikolsky's sign was present only on the upper part of the chest, where the eruption had been pronounced. On the mucous surface of the left cheek there was a vesicle the size of a pea with a red halo, of one week's duration.

The Wassermann test was negative. Urinalysis gave normal results. Blood counts were practically normal, with only 5 per cent eosinophils.

Biopsy showed increased cornification with hyperplasia of the epidermis. In one area the superficial layers of the epidermis showed necrosis and numerous polymorphonuclear leukocytes. Bacteria could not be demonstrated. Acanthosis was also present. In the corium there were perivascular collections of histiocytes, lymphocytes and polymorphonuclear cells.

DISCUSSION

DR. J. SKEER: Although this case appears to be one of pemphigus, erythema multiforme bullosum must be ruled out. Situated especially on the forehead, nose and malar regions are numerous coin-sized, raised, slightly infiltrated lesions that have a depressed center and an edematous ring. These lesions suggest the diagnosis of erythema multiforme bullosum. The onset and the development of the lesions is not typical of pemphigus. The condition might be the Senear-Usher type of pemphigus.

DR. G. PRICE: I think that it is a case of pemphigus.

DR. A. WALZER: At the present time I think that, clinically, this case is pemphigus of the Senear-Usher type. The onset was interesting in that the condition first impressed one as seborrheic dermatitis, owing to the distribution around the nose and the forehead and the apparently nonbullous type of lesions.

A CASE FOR DIAGNOSIS (FIBROMA?). Presented by DR. G. PRICE.

C. F., a white housewife, aged 57, born in the United States, noticed a small mass on the posterior aspect of the left leg two years previous to presentation

which slowly grew to the size presented about December, 1931, when she came to the clinic for treatment.

The mass was hard, about the size of a silver quarter, sharply marginated, firm and intimately associated with the skin. It was painless except on firm pressure. There was no discharge, bleeding or ulceration, although the center had the appearance of being scratched. The center of the lesion involved about one half of the diameter and was verrucous. About 1 inch (2.5 cm.) below the large lesion was another small hard mass which had had the appearance of the larger lesion at its onset.

DISCUSSION

DR. J. C. GRAHAM: I believe that this lesion is a fibroma. I do not think that a biopsy should be performed. If anything is done, the growth should be removed radically. However, I am inclined to let it alone at this time and observe it. I have a similar case in which a tumor was removed and there was a recurrence, not locally, but in various parts of the body. The patient now has twenty or twenty-five similar lesions.

DR. J. SKEER: The growth is probably a sarcoid because of the fact that it is deep-seated, hard, indurated, pigmented and attached to the skin. If the involvement is deep in the corium and subcutis, it is the Darier-Roussy type.

DR. L. CHARGIN: I think that the growth is a fibroma. I believe that after removal neurofibromas do not have a tendency to recur.

DR. A. WALZER: These subcutaneous or intracutaneous nodules are seen mostly in women. They are merely fibrous masses of no importance.

DR. G. PRICE: We have been unable to obtain permission for biopsy. We have considered the diagnosis of fibroma or neurofibroma. The upper lesion resembles a fibroma; the other resembles a sarcoid of Boeck.

A. M. PERSKY, M.D., *Secretary*

March 21, 1932

B. B. BERKOWITZ, M.D., *Presiding*

SYPHILITIC DACTYLITIS? Presented by DR. A. WALZER.

B. S., a woman, aged 35, married, was always well until three years previous to presentation, when she noticed a painful swelling of the right middle finger, at the middle joint. About ten months later, the corresponding joint of the fourth finger on the right hand and that of the fourth finger of the left hand became similarly affected. The rest of the joints, the skin and the mucous membranes were normal.

The involved fingers showed a fusiform swelling at the middle joint, the swelling being equal all around. There was no redness. On palpation some fluctuation with a little tenderness was noted. Roentgen examination disclosed rarefied areas on the proximal phalanges of the middle joints of the affected fingers. A number of Wassermann tests of the blood were made; a reaction of 1 +, a doubtful reaction and a few negative reactions were obtained. About ten injections of neoarsphenamine were given, with practically no improvement in the condition.

DISCUSSION

DR. E. W. ABRAMOWITZ: Solitary dactylitis, repeatedly negative Wassermann tests and indefinite roentgen findings do not indicate the diagnosis of syphilis. One may be dealing with osteo-arthritic changes of an obscure metabolic nature. The condition is not tuberculosis as there are no destructive lesions.

DR. E. A. GAUVAIN: I do not believe that one can make a diagnosis of syphilis when one considers the roentgenographic picture because of the lack of periosteal reaction and because the rarefaction of the bone does not have the characteristic spotty appearance; nor can one make a diagnosis of tuberculosis, for in that condition there would be definite destruction of bone in a lesion of this duration.

DR. A. WALZER: This woman was shown about a year ago at the section of dermatology of the Academy of Medicine as having a case of syphilitic dactylitis; this diagnosis was accepted. At that time the Wassermann reaction was 1+. Neoarsphenamine was given for a period, and then the patient disappeared from observation. She subsequently received more injections from some physician. I saw her again about two weeks ago; the condition was practically the same as previously.

I believe that the osseous changes at the proximal anterophalangeal joints on the third and fourth fingers of the right hand and on the fourth finger of the left hand may be considered as metabolic osteo-arthritic changes. This was my opinion a year ago.

MYCOSIS FUNGOIDES. Presented by DR. E. A. GAUVAIN.

L. K., a painter, aged 56, married, born in Belgium, had had an eruption over the face, body and extremities of eight months' duration, associated with intense pruritis. He had been admitted on two previous occasions to the Kings County Hospital with a diagnosis of generalized occupational dermatitis. On each occasion he remained in the hospital for a few weeks and was discharged as improved, but he never recovered entirely.

His last admission to the hospital was three weeks before presentation, at that time he had an acute eczematous eruption on the face and the upper extremities with considerable scaling. On the torso, in addition to the eczematous eruption, were numerous rounded or oval areas the size of a walnut, slightly elevated and having a slight infiltration. There was a generalized adenopathy and great enlargement of a gland in the neck, which began about one week prior to presentation, accompanied by a septic temperature of 102.6 F. This gland did not suppurate, and under treatment with wet dressings the enlargement had markedly subsided at the time of presentation. The Wassermann test of the blood and the examination of the urine gave negative results. The blood count showed 10,400 white cells, with 72 polymorphonuclears, 15 small mononuclears, 3 large mononuclears and 10 eosinophils; there were 4,288,000 red cells of normal morphology and 85 per cent of hemoglobin.

DISCUSSION

DR. E. W. ABRAMOWITZ The patient has an exfoliative dermatitis. Only by further observation can one tell whether it is due to occupational irritants or sensitization to foods or whether it is the premycotic stage of mycosis fungoides.

DR. J. SKEER: At first glance the condition appeared clinically as the infiltrative stage of mycosis fungoides because there was an enlargement of the glands of the neck. The glands of the groin were bunched and matted. The skin on the abdomen was thick and infiltrated. There was marked itching. On these grounds, a diagnosis of mycosis fungoides in the infiltrative stage may be made.

DR. E. A. GAUVAIN: A tentative diagnosis and the determination to present this case were not made until three days ago, and since a biopsy report would not have been returned in time for the meeting, a biopsy was not made pending our discussion of the case.

The patient has had this condition for eight months, during which he has had three attacks, but the condition has never entirely cleared up between the attacks. The pruritis has been intense. In the present instance, the patient has been in the hospital for three weeks, and I believe that an occupational dermatitis of this character would have been cured by this time.

LUPUS ERYTHEMATOSUS AND SARCOID? Presented by DR. J. SKEER.

B. B., a woman, aged *27*, born in Russia, came to the clinic of the Brooklyn Jewish Hospital complaining of an eruption on the face and arms. She had been in the Hospital from February 5 to March 19, 1927. The diagnosis then had been general lymphadenitis, toxic erythema and lupus erythematosus. A gland had been excised from the neck, and it showed chronic lymphadenitis. Roentgen therapy was administered to the axillae for probable Hodgkin's disease. The Wassermann test of the blood had been negative. Roentgen examination of the lungs gave negative results for mediastinal tumors.

The patient was readmitted to the hospital on Jan. 16, 1928, and was discharged on March 8. The diagnosis was chronic lymphadenitis, probably tuberculous. There was a marked reaction to tuberculin and a temperature of 103. An inguinal gland was excised, and the biopsy report was chronic lymphadenitis. Inoculation of this material into guinea-pigs gave negative results for tuberculosis. Drs. Throne and Berkowitz suggested the diagnosis of disseminated lupus erythematosus.

DISCUSSION

DR. E. W. ABRAMOWITZ: The lesions on the face suggest lupus erythematosus. The lesions on the arm are somewhat infiltrated and may be sarcoid.

DR. A. WALZER: I believe that the condition on the face is lupus vulgaris. There are distinct nodules of lupus vulgaris. The lesions on the arms consist of slightly edematous areas. The whole condition is one of lupus vulgaris plus some edematous (urticarial-like) nodules of the arms.

DR. E. A. GAUVAIN: From the lesions on the face, I should make no diagnosis except lupus erythematosus. There are small edematous patches and scaling. The lesions on the arms were edematous and plaquelike, and the only diagnosis they suggested was toxic erythema. I cannot make a diagnosis of sarcoid of Boeck.

LICHEN PLANUS—PSORIASIS? Presented by DR. J. SKEER.

I. S., a man, aged *60*, a tailor, born in Austria, came to the clinic of the Brooklyn Jewish Hospital complaining of an itching eruption on the hands and on the back of two months' duration. On the dorsa of the hands and the forearms were irregular-shaped, raised, shiny violaceous lesions. On both palms were numerous raised, verrucous lesions, some of which were topped with a tiny vesicle. In the sacral region were numerous papules the size of a millet seed with a tendency to grouping. There was a silvery scale on most of the papules, removal of which caused punctate bleeding. There was a large patch on the elbow. Lichenoid and psoriatic lesions were present on both legs and on the thighs. The Wassermann test of the blood was negative. The mucous membranes presented lichen-like lesions.

DISCUSSION

DR. E. W. ABRAMOWITZ: The presence of lichen planus and psoriasis in the same patient is uncommon. I recall seeing only one such case at the academy. I believe that all of the lesions in this patient are lichen planus.

A CASE FOR DIAGNOSIS (PARAPSORIASIS?). Presented by DR. W. H. BEST.

W. R., a man, aged *32*, first noticed the eruption five years previously. It had started in the inguinal region, the thighs and the abdomen as erythematous, scaly patches the size of a half dollar. These lesions became larger by peripheral extension until they reached maximum development. Later, similar patches developed on the upper part of the trunk and on the shoulders. They were distressingly itchy.

Patches ranging in size from that of a silver dollar to that of a dinner plate were present over the abdomen, the shoulders, the arms, the groin and the thighs.

These lesions were marginated, irregularly round, fawn and pinkish and were covered with sparse, furfuraceous scales. Scrapings for tinea gave negative results. The Wassermann test of the blood and a blood count gave negative results.

DISCUSSION

DR. E. W. ABRAMOWITZ: I am inclined to make a diagnosis of parapsoriasis, but the keratoderma of the palms, with the thickened nails and scaling of the toes, also suggests a diagnosis of psoriasis or dermatophytosis.

DR. A. WALZER: There are two possible diagnoses — parapsoriasis and mycosis fungoides. The peculiar configuration, the indentation and the shape of the lesions suggest mycosis fungoides. On the other hand, the six years' duration, the absence of infiltration, the peculiar configuration, the superficiality of the lesions and the fine scaling suggest parapsoriasis rather than mycosis fungoides.

LATE SECONDARY SYPHILIS. Presented by DR. BERKOWITZ.

S. B., a girl, aged 17, was admitted to the clinic with secondary syphilis, confirmed by Wassermann and Kahn tests of the blood. She had received two injections of neoarsphenamine. The last treatment was given on Sept. 4, 1931. She then went to the Kings County Hospital for further treatment. A course of neoarsphenamine in doses of 0.6 Gm. weekly was given. The eruption gradually faded. At the sixth injection she complained of itching, and the new eruption began to appear in spite of continued treatment. The eruption consisted of ringed lesions ranging in size from that of a dime to that of a quarter, the margin of which was slightly raised and consisted of psoriatic-like papules with silvery scales. The center of the lesion was clear but hyperpigmented.

The lesions were first noticed in one axilla in the posterior axillary line and spread across the chest to the mammary line. There were lesions on the inner surfaces of both arms and on the extensor surfaces of the thighs. Most of the lesions had coalesced to form serpiginous variegated chains. There was considerable pigmentation at the sites of former lesions.

DISCUSSION

DR. E. A. GAUVAIN: I think that there is no doubt that this is a recurrent secondary lesion. The eruption has the distribution or arrangement of tertiary lesions with many of the secondary characteristics. At the Kings County Hospital we occasionally see recurrent lesions that appear while the patient is under treatments which are not sufficiently intensive, or, more frequently, following a course of treatment when the patient has failed to report for a second course until the lesion recurred.

DR. E. W. ABRAMOWITZ: The patient presents marked pigmentary patches that evidently were the sites of previous syphilitic lesions. Even though she is still under treatment, scaly papules arranged in circles are now developing, practically all confined to the pigmentary plaques. In some places scaly papules are even noted in the center of these annular papular scaly lesions. The most probable diagnosis is that of a relapsing annular papular syphilid, recurring at the sites of pigmentation, following a previous syphilitic eruption. One must consider also a possible diagnosis of psoriasis provoked by arsenical treatment. It is a very unusual case.

Leukoderma coli and faint pigmentations on other parts of the body following the involution of a syphilitic eruption are not common. Deep pigmentations such as this patient presents, which are said to have followed the involution of previous syphilitic lesions, are quite rare in my experience.

DR. A. WALZER: I should call this condition a late secondary annular lichenoid syphilis which probably was precipitated by treatment. This type of case is resistant to treatment. Is it possible, in view of the peculiar configuration, ring within ring, that the whole process has some connection with the arsenic employed in the treatment?

NEW YORK DERMATOLOGICAL SOCIETY

EDWARD R. MALONEY, M.D., *Secretary*

Regular Meeting, Feb. 23, 1932

J. FRANK FRASER, M.D., *President*

A CASE FOR DIAGNOSIS. Presented by DR. JOHN E. LANE.

G. W., a young man, aged 17, had been troubled with a generalized pruritus since Thanksgiving. He had had occasional small abscesses but when presented he was free from them. There were scratch marks on the legs, arms and chest, but no other lesions were visible.

DISCUSSION

DR. FRED WISE: I should suggest that parasitic infection derived from mattresses and bed-clothing be considered.

DR. W. J. HIGHMAN: Little as the condition looks like scabies, I should rule out this disease. If the case is not so simple as scabies, it is possibly in the toxic group, including the urticarias or possibly Duhring's disease, or it may be a prodrome of leukemia and should be watched because of that possibility. Perhaps the potassium iodide test should be made. The condition seems to be in the category of an itching toxic eruption.

DR. GEORGE M. MACKEE: I agree with what has been said excepting that concerning the possible parasitic etiology. Dr. Lane should observe the patient frequently for several weeks for the purpose of detecting elementary lesions. Nothing is seen now except secondary lesions, the result of scratching, and it is difficult to make a diagnosis on the presence of pruritus alone. Ordinarily when one sees many scratch marks of this sort one thinks of pediculosis; this possibility is out of the question in this case because of the location of the eruption. I saw one lesion consisting of an edematous papule, which might be a coincidental lesion; however, if such lesions are found to be fairly common the case might fall into the erythema multiforme group. The patient stated that there is pruritis in areas where there is no eruption, and that there are no elementary lesions. Despite the youth of the patient the condition may be generalized essential pruritus. If he were an old man that is the condition we would consider. While it is not common in young persons, generalized essential pruritus or toxic pruritus should be considered.

DR. R. H. RULISON: The patient told me that he roomed this fall in a new dormitory in which the bedding was new, and a month or two later the pruritus appeared; it was not noticeable during the day but only at night. I suggested to Dr. Lane that the bedding might be the cause of the pruritus.

DR. J. F. FRASER: I agree with Dr. MacKee's suggestion that the patient be kept under observation with the idea of finding an initial or primary lesion.

A CASE FOR DIAGNOSIS (LUPUS ERYTHEMATOSUS?). Presented by DR. FRED WISE for DR. JOHN HARRIS.

K. M., a woman, aged 33, single, was first seen on Oct. 14, 1931; she presented an irregular, infiltrated, erythematous lesion covered with adherent scales and showing patulous follicles on the bulb of the nose. The Wassermann, provocative and Klein tests gave negative results.

Since November 4, seventeen injections of gold sodium thiosulphate (80 mg. in each dose) had been given, with slight improvement. Roentgen examination of the lungs gave negative results. Physical examination gave essentially negative results except for the teeth which were in an unhealthy condition and were being taken care of, three having been removed recently. The lesion was a dime-sized, erythematous, infiltrated and scaly patch on the bulb of the nose, presenting dilated patulous follicular orifices.

DISCUSSION

DR. GEORGE M. MACKEE: I understand that syphilis has been ruled out. The case might be one of lupus vulgaris resembling lupus erythematosus, which might account for the failure of therapy with gold preparations. There is a scar in the center of the lesions which suggests previous ulceration, which, in turn suggests lupus vulgaris. However, ulceration has not occurred, so that the scar may be an area of atrophy. The dilated follicles and the age of the patient indicate lupus erythematosus. Assuming that the condition is lupus erythematosus and since Dr. Wise has asked for suggestions, I recommended further treatment with gold compounds. It is not uncommon to give several times the number of injections already given before satisfactory results are obtained; Dr. Wise might also try supportive treatment with arsphenamine, etc., and mild stimulating applications of solid carbon dioxide or mild radium treatment with beta rays. The diagnosis should be established first. If it is not possible to perform a biopsy, a graded tuberculin test should be made.

DR. F. C. COMBES: I agree with Dr. MacKee that more effort to establish a definite diagnosis should be made. I think that the condition looks like lupus erythematosus, and there is a possibility that it may be tuberculous. A roentgen examination of the chest and graduated tuberculin tests should be made. I think that the only way a definite conclusion can be reached is by removing a small piece of tissue from the nose; this can be done without adding to the scar which the patient already has, or will have before she has recovered.

DR. J. F. FRASER: Referring to Dr. MacKee's remarks about the age of the patient, it must not be forgotten that lupus vulgaris, though a disease of early life, occasionally occurs in adults, and some observers claim that when it does occur in adult life the favorite site is the nose. The view that if this were a case of lupus vulgaris one should look for a primary focus was expressed by one of the members; in my opinion, a primary focus does not mean anything. Lupus vulgaris is probably not a secondary condition. Some one referred to the fact that therapy with gold compounds has not yielded beneficial results. It is possible that the presence of focal infection may have inhibited beneficial results from therapy with gold preparations. I remember a typical case (one of Dr. Schwartz's) in which cure did not result from injections of a gold preparation until after the removal of infected teeth. I believe with Dr. MacKee that treatment with gold preparations should be persisted in. A biopsy would probably settle the question of diagnosis, but that seems impracticable in this instance.

DR. M. B. SULZBERGER (by invitation): It is true that a woman of the age of the patient may be expected to give a positive reaction to the tuberculin test, for the likelihood that she has had a lesion of the lungs (perhaps old and healed) is certainly great; but if she has lupus vulgaris she will probably give a strongly positive reaction to tuberculin. The patient might react to tuberculin in higher dilutions than normal persons. Most patients with lupus erythematosus give a normal reaction. For this reason, a strong sensitiveness to tuberculin would be in favor of lupus vulgaris.

CHRONIC CELLULITIS OF THE FINGER. Presented by DR. F. C. COMBES.

H. E., a woman, aged 37, had accidentally stuck the point of a needle into the tip of her right second finger, six months previously. The terminal phalanx became inflamed and tender. Roentgen examination gave negative results. Under local applications the swelling had subsided, but it recurred on four occasions. The patient was presented for suggestions as to treatment.

DISCUSSION

DR. FRED WISE: The possibility of Hallopeau's acrodermatitis continua should be borne in mind in making a differential diagnosis.

DR. C. M. WILLIAMS: It is a difficult and interesting case. I do not think that the condition is acrodermatitis (Hallopeau); the border is a straight horizontal line with no pustules, and the history tells of periods of great improvement, in which the condition of the skin becomes almost normal, followed by recurrence but still no pus is present. I should expect a greater involvement of the nail in acrodermatitis of such long long duration occurring on the end of the finger. The whole appearance strongly suggests dermatitis due to an external irritant, possibly phenol.

DR. GEORGE M. MACKEE: I agree with Dr. Williams in regard to Hallopeau's dermatitis and also with regard to dermatitis artefacta, and for the reasons he gave. However, one should not carelessly reject Dr. Combes' diagnosis of cellulitis. If it is not a case of malingering, one should consider the possibility of a recurrent streptococcic lymphangitis and cellulitis. In such cases there is usually a focus in some adjacent cavity. In this instance there may be a local small pocket of pus.

DR. JOHN E. LANE: I should not be surprised to find that the condition was due to a streptococcus infection of little virulence. It may prove to be Hallopeau's disease.

DR. R. H. RULISON: My first impression was that the condition was a self-produced dermatitis. If not, I think that it has some relation to the fact that the patient has been accustomed to use a thimble, which may have something to do with causing the eruption.

DR. F. C. COMBES: I took into consideration Hallopeau's acrodermatitis continua, but the lesion remained so confined for such a period of time and free from pustules that I discarded this diagnosis. This is the first time I have ever seen fluid present in the lesion. The peculiar thing about the lesion is that after it balloons it is red and tender, and then it gradually subsides under local treatment. The sharply defined border disappears; the finger becomes almost normal in size and appearance and remains so for a couple of weeks, and then the condition recurs within a few hours. My acquaintance with the patient does not lead me to think that the condition is artificially produced. She tried sewing, using a celluloid thimble on the finger for two hours; this produced a recurrence of the lesion. At other times it has occurred spontaneously.

SCLERODERMA WITH ATROPHY (ATROPHIA CUTIS IDIOPATHICA?). Presented by DR. FRED WISE.

A. C., a woman, aged 63, born in the United States, first called at the skin clinic of the Post-Graduate Hospital on Feb. 23, 1932. The lesions occupied the skin of the abdomen, breasts, pubic region and the frontal and lateral aspects of the thighs. The lesions were widespread, bluish-red, smooth, soft scaly plaques of various sizes and shapes; they were most pronounced on the thighs, beginning 2 inches below Poupart's ligament and extending down to the knees. In all of the aforementioned areas moderate atrophy was apparent, but on the inner surface of the left thigh, approximately in the middle, there was an irregular patch of ivory yellow, distinctly atrophic scleroderma which to the palpating finger was considerably more indurated than the adjacent skin. Both forearms, anteriorly, presented discolored patches of slightly atrophic hyperpigmented skin the size of a dollar. Subjectively, there was a burning sensation at night. Striae distensae of the abdomen were very marked.

The duration of the eruption was eight months.

DISCUSSION

DR. C. M. WILLIAMS: I did not detect scleroderma on the trunk. On the thighs, however, the lesions are almost like those seen many years ago on a patient of mine with typical scleroderma on the legs and feet, and on the arm similar atypical patches. I think that it is a case of the early stage of scleroderma, and that the lesions on the thigh may stay about as they are almost indefinitely.

DR. W. J. HIGHMAN: The lesions seem superficial for scleroderma. I do not think that one can differentiate sharply between one type of atrophy of the skin and another. I was not satisfied that such atrophy was present on the abdomen, but it was present on the thighs. The condition may be scleroderma, but I should be more inclined to think that the patient has a condition not infrequently seen in older persons, particularly those who are losing weight, and although it may be scleroderma I should not be surprised if it were senile atrophy.

DR. JOHN E. LANE: I agree with the diagnosis as stated by the presenter of the case.

DR. J. J. ELLER: At the present I do not see typical scleroderma but only areas of atrophy. I could not judge from examining the patient whether or not scleroderma had been present previously.

DR. F. C. COMBES: I did not see thickened areas such as one would expect to see in scleroderma. However, I think that the peculiar feature on which such a diagnosis can be made is the pigmentation. I do not think that this type of discoloration is seen except in scleroderma. I agree with the diagnosis.

DR. FRED WISE: When examined in daylight the eruption presented unmistakable evidences of scleroderma with patches of advanced atrophy.

LUPUS ERYTHEMATOSUS DISSEMINATUS: SYNDROME OF LIBMAN-SACHS (?). Presented by DR. FRED WISE.

Mrs. F., aged 32, a patient of Dr. Straus of New Haven, had been well prior to the appearance of the eruption of the skin presented. This eruption appeared on the thighs and hands in May, 1931, and spread to the arms, neck, face and legs. During the summer, the patient suffered from pains in the joints and was being treated for rheumatism. She was first seen at the skin clinic at the Post-Graduate Hospital in October, when typical disseminated lupus erythematosus was present. She was treated with plasmochin, but took an overdose, and a definite exacerbation of the lesions, with a temperature of 102 F. and the appearance of pemphigus-like bullous lesions on the forehead, arms, neck and mouth, occurred. Physical examination revealed a slight heart murmur and swellings of some of the joints of the upper and lower limbs. The condition of the skin had improved with the administration of plasmochin, high colonic irrigations and bismuth oxychloride ointment.

When presented, the patient showed atrophic areas of skin in those regions that had previously been the sites of the eruption, namely, the arms and forearms, chest, neck and thighs. These areas were sharply defined, hyperpigmented and, in some areas, depigmented, with occasional islands of fine telangiectasis scattered throughout the atrophic patches of skin. The combination of a possible nonbacterial endocarditis with articular symptoms and the cutaneous manifestations suggested the Libman-Sachs syndrome.

DISCUSSION

DR. F. C. COMBES: I think that the condition is lupus erythematosus acutus, and Dr. Wise is to be congratulated on the excellent results he has obtained.

DR. M. B. SULZBERGER (by invitation): I saw the patient when she first came for treatment and even took her to Dr. Libman to see whether he considered the condition that which he and Dr. Sachs had described and he said that it was not, as atrophy is not present in this condition. An important factor is that the patient has other disturbances; she has arthritis and endocarditis. I suppose that the exact diagnosis can be decided only by autopsy, which we hope will long be deferred. Medication with plasmochin has been beneficial in this case, and I should recommend its use in the treatment for lupus erythematosus acutus.

KAPOSI'S SARCOMA. Presented by DR. JOHN E. LANE.

T. F. D., a man, a linotype operator, aged 65, of English and Irish descent, presented an eruption on both feet which started as a small nodule on the dorsum

of the right foot, about two years prior to presentation. Numerous pea-sized nodules on a dark base were exhibited. The diagnosis had been confirmed microscopically by Dr. J. F. Fraser.

The patient was presented on account of the rarity of the condition in persons born in this country: his family, of English and Irish descent, had been in this country for two generations. Dr. Lane desired to know whether any one present had seen the disease in native born Americans of English descent.

DISCUSSION

DR. JEROME KINGSBURY: At one of the meetings of the American Dermatological Society held in Philadelphia the case of a man, 60 years of age, American born and of American ancestry, having this disease was presented.

DR. GEORGE M. MACKEE: I think that I have seen the disease in patients who were born in this country, but so far as I can recall I have never before encountered the disease in a patient who had no Mediterranean ancestry. This patient is of English and Irish stock, born in this country and with no immediate Mediterranean ancestry.

DR. J. F. FRASER: In this case the histologic picture confirms the clinical diagnosis and lends strong support to the view that the syndrome known as Kaposi's sarcoma is not a sarcoma. Proliferation of capillary endothelium is seen; whether or not the condition will develop into true sarcoma is an open question.

TRICHOSTASIS SPINULOSA. Presented by DR. E. F. TRAUB.

R. R., a broker, aged 35, born in the United States, presented a typical eruption over the forehead, nose and cheeks. The pores were greatly enlarged, and seemed to be filled with comedones. However, when the material was expressed, clusters of fine, undeveloped hairs were discovered in each pore. Probably the condition had been present for many years without the attention of the patient being drawn to the disorder. He had been suffering for many years with marked seborrheic dermatitis of the face and scalp, and it was for this condition that he sought medical aid.

DISCUSSION

DR. C. M. WILLIAMS: My attention was first called to this condition by the article of Burgess in the Pre-Sessional Volume of the American Dermatological Association in the spring of 1931. It reminded me of a case seen by us several years previously, that of an old woman with hypertrichosis. After treating some of the follicles by electrolysis, my forceps removed what seemed to be only sebaceous matter, but I did not take the trouble to examine it under the microscope. The patient's chin was studded with small black masses projecting from the follicles. After reading Burgess' article, I examined several people over 50 years of age and found these tiny hairs in all, even when no projections from the follicles were visible to the naked eye.

DR. GEORGE M. MACKEE: I hold the same opinion as does Dr. Williams, namely, that in adult life this condition is very common. Not infrequently patients come to us for treatment of what they think are comedones, which prove on careful examination to be trichostasis. Apparently the condition is common on the forehead, nose, chest and back of adults.

DR. J. E. LANE: I agree with the diagnosis as presented. It is astonishing that so common a condition has been overlooked so long.

DR. R. H. RULISON: I should like to inquire about the therapy.

DR. J. F. FRASER: As to the origin of the trichostatic hairs, the development of the hair presents close analogies to that of the teeth. Like the hairs, the teeth arise from epidermal downgrowths. In the development of a tooth there are

two chief trends: one destined to form the milk tooth and the other the permanent tooth. There are also rudimentary or potential buds from which abnormal teeth may be formed.

The hair follicle is also a downgrowth and contains within itself numerous potential buds. Under normal conditions the development of these buds is regulated by some local mechanism which allows only one to mature and function in the formation of hairs. If this regulated mechanism is disturbed, or in other words, if the normal inhibition is removed from the potential buds, they may develop into numerous so-called trichostatic hairs. I think that Burgess has demonstrated that the cause of these hairs is not stasis.

DR. E. F. TRAUB: For purposes of record, I should like to say that in the course of the last two or three days we have examined twelve patients, both men and women, at random, and that the condition was found to be present in eleven. It is therefore obvious that the disorder is much more common than has generally been supposed.

TUBERCULIDS (?). Presented by DR. F. C. COMBES.

G. M., a girl, aged 9 years, was admitted to the skin clinic of the University and Bellevue Hospital Medical College with a rash on the trunk of two years' duration which was accompanied by only slight occasional itching. Examination revealed about two dozen superficial, well-defined crusted papules about 5 mm. in diameter located particularly on the back, extending from the shoulders to the thighs. They were widely dispersed. Over the remaining area there were several dozen superficial, white, atrophic scars, the sites of previous lesions. Roentgen examination of the chest revealed bilateral pulmonary tuberculosis of the childhood type. The tuberculin test was negative. Treatment with the cold quartz lamp had been given, with improvement.

DISCUSSION

DR. C. M. WILLIAMS: Why is a diagnosis of tuberculid made in this case? The patient is an anemic, undersized child, in whom one would expect lack of resistance to any disease, and the entire eruption may be only multiple folliculitis. The patient has pulmonary tuberculosis, to be sure, but does it follow that any dermatosis from which she may suffer is secondary to the tuberculosis?

DR. W. J. HIGHMAN: I agree with Dr. Williams.

DR. GEORGE M. MACKEE: I agree that the eruption does not closely resemble a tuberculid. There are no new lesions, so one cannot be certain whether or not the lesions are deep-seated papules or nodules, whether the elementary lesion is deep or superficial and whether there are exacerbations and remissions. The distribution is not typical of tuberculid, and there are no scars. The fact that the patient has pulmonary tuberculosis does not mean that we are dealing with a tuberculid. I agree that while the case may be tuberculid, it may be a pyoderma.

DR. J. E. LANE: The lesions were all on the back and grouped as are those in acne. I see nothing that would incline me to the diagnosis of tuberculids.

DR. M. B. SULZBERGER (by invitation): If these lesions are not tuberculids, how does one account for the negative tuberculin reaction in the presence of active pulmonary tuberculosis? The negative tuberculin reaction is what one would expect in cases of papulonecrotic tuberculids. Persons with this condition are often less sensitive than normal persons.

DR. J. E. LANE: How many of these cases have been reported in pulmonary tuberculosis?

DR. M. B. SULZBERGER (by invitation): All such cases have occurred in patients with either active or healed (quiescent) pulmonary tuberculosis or some other form of active or healed internal tuberculosis. The patients with tuberculo-

derma are roughly divided into three groups: in the first group the patients are usually hypersensitive; this group includes lupus vulgaris, scrofuloderma, etc.; the patients in the second group are slightly less sensitive than normal persons; this group includes those with papulotuberculids; and patients of the third group (those with sarcoid, lupus pernio, etc.) are often markedly less sensitive to tuberculin than average persons of their age: in the serum of these anergic patients one can sometimes demonstrate antibodies capable of accomplishing the neutralization of tuberculin in vitro. Theoretically, one might say that these last groups have gone past the stage of hypersensitization, and are on the way to hyposensitization. However, all one can say with certainty is that they are in a nonreactive state, and that this is a different form of anergy from that seen in cachexia, after measles, etc. In this case the anergy is particularly striking, for there is no other way of explaining why a child with an active pulmonary lesion and otherwise in a fair state of health should give a negative reaction to tuberculin. The only explanation is that something has happened to the reaction of the skin to tuberculin, and that the reaction seen is characteristic of that frequently observed in papulonecrotic tuberculid. A reduction of the sensitivity of the skin to tuberculin is one of the differential diagnostic points in favor of papulonecrotic tuberculid, but by no means pathognomonic or decisive in the individual case.

DR. FRED WISE: I agree with the diagnosis as presented by Dr. Combes.

DR. F. C. COMBES: I am thinking what a pity it would have been to have had a histologic diagnosis in this case; it would have deprived us of some instructive discussions. I hesitated to make a definite diagnosis because of the superficial character of the lesions, which are not what we are accustomed to call papulonecrotic tuberculids. They are not pitted or located in the usual areas for papulonecrotic tuberculid. However, the eruption is of two years' duration; the lesions are indolent and sluggish, each lasting several weeks, and they are not pustules but appear as superficial papules which break down, forming a crust. The patient has active pulmonary tuberculosis of the childhood type. I considered the negative tuberculin test as favoring the diagnosis, as in over 75 per cent of the cases of this type of tuberculid it is negative, the skin being in a state of anergy. However, I will obtain a histologic diagnosis, which may possibly aid in classifying the condition.

ANETODERMIA: SCARS FOLLOWING TERTIARY SYPHILIS? Presented by DR. FRED WISE.

G. B., a Negro, aged 42, born in the United States, was referred from the Post-Graduate Hospital for a blood test. He was suffering from gastric pains of an unknown origin. On the face, shoulders, trunk and extremities were numerous discrete lesions ranging in size from that of a small pea to that of a silver quarter; some of them were pigmented spots and some were scar formations with thinning of the skin (cigaret paper wrinkling). There were many large pitted scars on the face. The patient gave a history of having had, twenty years previously, a generalized eruption diagnosed by the physician as smallpox. He was confined to bed for three weeks. He also had gonococcic urethritis.

The Wassermann, Kahn and Klein tests of the blood were negative. The spinal fluid was entirely normal.

DISCUSSION

DR. GEORGE M. MACKEE: We are dealing with the end-results of a former eruption which may have been a syphilid or a pyoderma. Even the scar on the penis may be the result of former pyoderma. The scars are interesting; they are puffy and resemble dermatolysis. Histologically, they might show myxomatous degeneration of the connective tissue. The pigmentation is not indicative of syphilis, as many eruptions cause pigmentation in the Negro. The negative serologic test does not help much.

EDWARD R. MALONEY, M.D., *Secretary*

Regular Meeting, March 22, 1932

J. FRANK FRASER, M.D., *President*

LICHEN PLANUS (ACUMINATUS). Presented by DR. PAUL E. BECHET.

Mrs. F. B., aged 23, was first seen on Dec. 10, 1931. At that time she had generalized typical lichen planus which had been present for a month. On the flanks and arms the lesions were so numerous that they were aggregated in sheets, forming solid patches of eruption. There were much itching and numerous scratch marks. The patient received seven doses of ¼ skin unit (about 75 roentgens) of roentgen rays once a week. Mercuric salicyarsenate was given twice a week for approximately twelve weeks. She also took 1/30 grain (22 mg.) of sodium arsenate three times a day. After a month's absence the patient called at my office on March 17, at which time she presented a marked acuminate papular hyperkeratosis, strongly resembling pityriasis rubra pilaris; the skin had the characteristic "nutmeg-grater" feel; yet many intervening lesions were typical of lichen planus. There was no thickening of the palms or soles, and no broken hairs on the third phalanges of the fingers.

In my opinion, the patient is suffering from an unusually extensive and severe type of acute lichen planus, in which possibly the arsenic ingested has caused hyperkeratosis. At no time, however, has the patient presented constitutional symptoms of arsenical saturation.

DISCUSSION

DR. W. J. HIGHMAN: This case is undoubtedly one of the condition that Hebra had in mind when he spoke of lichen ruber acuminatus. This was the type of lichen planus that created all the original discussion, the problem of which was finally cleared up by Wilson. Pigmentation is almost inherent in lichen planus. Lustgarten thought that the use of arsenic favored intensification of the condition. Microscopically, the lesions present many chromatophores which disappear gradually weeks, months or even years after the acute stage. The pigmentation in this patient may have been intensified by the arsenic, but was not caused by it.

DR. P. E. BECHET: The pigmentation does not interest me as much as the hyperkeratosis. This patient is a woman with an ordinary but extremely severe type of lichen planus which after three months of average arsenical treatment presents extensive hyperkeratotic lesions. Pigmentation frequently follows roentgen therapy, or the disease itself, and is common, but this peculiar lichen ruber acuminatus-like hyperkeratosis is unusual, and in my opinion arsenic is responsible for it. When first seen the lesions were absolutely typical of lichen planus. The extensive follicular hyperkeratosis is a recent development.

DR. F. C. COMBES: I agree with the diagnosis and interpretation by Dr. Bechet of the present clinical picture. The arsenic ingested has probably intensified the lichen planus. It is well known that arsenic given internally can produce typical lichen papules. As Dr. Highman has said, this is probably the condition originally described by Hebra as lichen ruber acuminatus, which he considered identical with the lichen ruber planus of Erasmus Wilson.

DR. J. J. ELLER: I agree with the presenter's interpretation and think the pigmentation looks like that sometimes seen after the administration of arsphenamine—an arsenical pigmentation.

DR. BINFORD THRONE: I am inclined to agree with the idea of arsenical irritation. This can be easily proved; if the arsenic is being retained, examination of the urine will not show any of this metal; after the administration of sodium thiosulphate the arsenic will appear in the urine, and if the amount is more than 20 micromilligrams per hundred grams of dried substance it is

indicative of a pathologic condition and will signify the presence of an arsenical element in the clinical picture of this case. Without such examination, no positive statement can be made.

DR. C. M. WILLIAMS: If there has been retention of arsenic, the administration of sodium thiosulphate will increase the elimination of arsenic, but that would not prove that the arsenic had been stored in the skin. It might have been stored in any other organ. The pigmentation may be due to any one of a number of other causes, or to a combination of causes.

DR. BINFORD THRONE: Experience shows that if arsenic is being retained it is not therapeutically active and is in the tissues in an insoluble form, and of course examination of the urine would not show any of this substance, for only after the arsenic has been rendered soluble by the sodium thiosulphate could it be detected in the urine. This would show an association of this metal with the clinical condition in Dr. Bechet's case.

DR. W. J. HIGHMAN: May I make a remark relative to the three factors mentioned as possibly causing pigmentation in this patient? A fourth factor that I wish to emphasize is that lichen planus is a pigmentary disease.

LUPUS VULGARIS TUMIDUS. Presented by DR. FRED WISE.

Miss N. M., aged 55, born in Ireland, a patient at the Post-Graduate Skin Clinic, has previously been shown at the meeting of the Manhattan Dermatologic Society on November 10, 1931. The disease appeared when she was 10 years old.

On examination, the lower quarter of the lobe of the left ear was so enlarged that it depended 1½ inches (3.7 cm.) below the meatus and consisted of a rather pear-shaped mass of tumefied tissue 2 inches (5 cm.) long and approximately from ½ to ¾ inches (1.2 to 1.8 cm.) wide. The anterior surface showed moderate crusting and ulceration. There were also a number of pea-sized nodular tumors at the posterior portion of the ear as well as at the helix opposite the meatus. Anterior to the lobe for half an inch, the skin presented a large group of papules, some of which had coalesced; these were yellowish and were smooth and soft to the touch. The skin between the lobe of the ear and cheek was deeply fissured; behind the ear were lupoid lesions with scarring. The left side of the neck showed a scar 4 inches (10 cm.) long.

The patient has received five injections of gold sodium thiosulphate, a total of 30 mg., and also eight exposures to roentgen radiation, of ¼ skin unit each (about 75 roentgens), and four exposures to ultraviolet radiation. She has been on a salt-free diet high in vitamins for three and a half months, but has shown no improvement.

DISCUSSION

DR. JOSEPH E. LANE: I have had a similar case in which there were lesions all over the body and a condition of the ear much like that in this case though the enlargement was not so great. I obtained fairly good results by treatment with the galvanocautery over a long period of time. The color does not disappear, and the contour of the ear is not improved, but the size may be greatly reduced.

DR. JEROME KINGSBURY: This case should be left alone.

DR. F. C. COMBES: The woman wants treatment, or she would not have applied to the clinic. If it is refused, she will probably go elsewhere. I agree with Dr. Lane that the galvanocautery would be effective on the lobe of the ear. For the satellite lesions I should use the local applicator of the cold quartz lamp. I have treated several patients with long-standing lupus vulgaris in this way, with excellent results. I think that this method of treatment is conservative, and that the chances of improvement are good.

DR. E. F. TRAUB: I agree that for a woman of this age radical treatment may not be indicated. The ear seems to be a rather common location for this

condition, as I have treated two younger women who presented almost an identical appearance. It is a simple matter to excise the lobe of the ear under procaine hydrochloride anesthesia, using the electric cutting current. Little discomfort results; the healing is unusually prompt for this type of procedure, and the cosmetic result is excellent. The outlying satellite spots, of course, would have to be treated separately by cautery puncture or some other method. I have tried the cold quartz method with pressure, but found that it was necessary to cause a considerable reaction to produce much benefit, and this usually results in more discomfort than does cautery puncture.

Dr. George M. MacKee: I understood Dr. Wise to say that he had used a diet low in sodium chloride. It is preferable to allow no sodium chloride at all, either directly or indirectly, and to have the diet rich in vitamins; salts other than sodium chloride are permissible. In this connection, however, the Saranac experts claim that they have secured satisfactory results with a high vitamin diet and no attention paid to the salt intake.

There are several therapeutic methods that might be useful in this case. Injections of tuberculin over a period of a year or two might give the desired result. Possibly the best results can be obtained with ultraviolet radiation given by the method of Finsen—not necessarily with the Finsen lamp, but at least by producing a severe reaction with ultraviolet radiation administered during dehematization by compression. The good results are probably due to the inflammatory reaction rather than to any specific effect. General irradiation of the body might also be useful.

I can think of no reasons why the cold quartz lamp should give better results than those obtained with other lamps. Radiation from the cold quartz lamp contains a preponderance of short wave lengths falling in the bactericidal range of the far ultraviolet portion of the spectrum. These wave lengths have little penetrability. The lamp provides an intense source of heterogeneous radiation, but most of the radiation consists of short wave lengths. Because of the short distance and the intense radiation, erythema is produced with short exposures. More observation is necessary before the results of treatment with the lamp can be compared with those obtained with lamps producing longer wave lengths. Another method of treatment that might prove useful in this case is repeated exposure to large doses of grenz rays. Finally, in connection with the treatments already mentioned, one may destroy the individual nodules with the actual cautery, with electrodesiccation and by similar methods.

Dr. John E. Lane: Scarification would not work well on the lobe of the ear, but would be effective only on the smaller lesions.

Lichen Planus Linearis. Presented by Dr. F. C. Combes.

H. N., a man, a native of Norway, presents an eruption of nine months' duration. It is composed of many flat, angular, shiny papules extending in a line from the right nipple to the anterior axillary fold and then down the upper extremity to the anterior surface of the wrist. On the chest the band of lesions is about 1 cm. in width, but on the arm the lesions extend to a width of about 3 cm. On the genitals and on the backs of both hands are a few isolated papules.

DISCUSSION

Dr. George M. MacKee: I agree with the diagnosis. The case is unusually picturesque.

Dr. E. F. Traub: In association with the cutaneous lesions the patient also presents some typical annular lesions in the mouth. There seems to be no question as to the diagnosis.

Dr. Fred Wise: There are also lesions on the penis that are interesting as confirmative evidence.

DR. J. F. FRASER: The distribution of the linear lesions suggests an analogy to zoster. The initial lesion in zoster is in the posterior root ganglion. Is it not possible that the causative agent of lichen planus, whatever it may be, affects primarily the spinal ganglions and produces cutaneous lesions along the course of the peripheral nerves, as in zoster? The analogy would be complete if the lesions in this case were unilateral, but they are not; scattered discrete lichen papules are present on the left side of the body. Forester has used spinal roentgen therapy in generalized lichen planus, with good results. It would be interesting to know the rationale of this procedure.

A CASE FOR DIAGNOSIS (ULCER OF THE HAND?). Presented by DR. HOWARD FOX.

P. R., aged 48, born in Russia, a kosher butcher by occupation, cut both hands while at work about three and a half months prior to this presentation. One wound on the dorsum of the left hand was the beginning of the ulceration presented; the other was a small punctured wound of the middle finger of the right hand which healed after several weeks. The lesion on the left hand slowly progressed until at examination it occupied almost the entire dorsal surface. At the border were a number of gyrate, sharply demarcated, small punched-out ulcerations with semisolid border and purulent discharge. The central portion of the affected area was apparently healed. The tissues beyond the ulcerated areas were bluish and edematous. There were moderate enlargement and slight tenderness of the epitrochlear and axillary glands of the left side.

The Wassermann test was negative, and there was practically no response from two injections of neoarsphenamine of 0.3 Gm. each. Histologic examination showed simple inflammation, and the urine contained no abnormal ingredients. Repeated examinations have failed to show the presence of blastomycetes, actinomycetes or tubercle bacilli; neither were any of these organisms found in sections.

The patient has received one massive treatment with roentgen rays, followed by slight improvement. He is also taking iodides by mouth in increasing doses.

DISCUSSION

DR. BINFORD THRONE: Dr. Fox seems to have done everything possible to establish a diagnosis in this case. Since he is using iodides, it would be interesting if he would try Ravaut's method of injecting intravenously a modified compound solution of iodine mixed at the time of injection with a freshly prepared solution of sodium thiosulphate. My experience with iodide in two cases of actinomycosis was not satisfactory. The dose had to be enormous, and in one case a cure was not obtained. With Ravaut's method, in two cases of tinea barbae (in both of which there were positive reactions by culture and by examination of the hairs), a cure was effected in a short time. The initial dose with this method was 1 cc. of a 1 per cent compound solution of iodine, mixed at the time of injection with 10 cc. of a 10 per cent solution of sodium thiosulphate; the amount of the compound solution of iodine was gradually increased up to 5 cc. If this method is tried, I should be glad to learn the result.

DR. C. M. WILLIAMS: I agree with Dr. Throne that in deep mycotic infections the best results are obtained by intravenous injection of an iodine preparation. In this case the diagnosis is difficult. I favor tuberculosis rather than blastomycosis, because of the lack of pustules at the periphery which one usually finds in blastomycosis.

DR. GEORGE M. MACKEE: Dr. Fox has made a comprehensive attempt to establish the diagnosis and has failed. Naturally, one cannot make the diagnosis on clinical grounds. I obtained a different clinical impression from that of Dr. Williams. I think the condition looks more like blastomycosis than like tuberculosis verrucosa cutis. Dermatitis medicamentosa has been ruled out.

DR. FRED WISE: I suggest that inoculation into a guinea-pig be made. I favor a diagnosis of tuberculosis cutis.

DR. J. F. FRASER: I am inclined to agree with Dr. Williams' clinical interpretation rather than with Dr. MacKee's, namely, that this condition is tuberculosis from inoculation; the man's occupation would favor that view. One frequently sees this type of tuberculosis in patients who handle infected meat. It is difficult sometimes to demonstrate the tubercle bacillus; one has to search continuously. I agree with Dr. Wise that inoculations of guinea-pigs should be made, and I also suggest histologic examination of the newer nodules.

DR. GEORGE M. MACKEE: The evolution is too rapid for tuberculosis verrucosa cutis. It is doubtful if this type of tuberculosis would produce a lesion of this size in three months. Dr. Fox thought there had been a definite improvement as the result of a single dose of roentgen rays consisting of 1¾ skin units (about 525 roentgens). Roentgen rays are more efficaceous in blastomycosis than in tuberculosis verrucosa cutis. The lesion is somewhat vegetative, but not verrucous, and there has been considerable inflammation. These characteristics are more typical of blastomycosis than of tuberculosis verrucosa cutis. I still favor the diagnosis of blastomycosis on clinical grounds.

DR. J. F. FRASER: In regard to the statement that the duration was not sufficiently long for the development of a tuberculous lesion, in my opinion there is no reason why a massive invasion by the tubercle bacilli of multiple foci should not produce a lesion of this extent.

DR. W. J. HIGHMAN: The condition is a granulomatous lesion which is responding to the therapy selected for it, and the infectious agent is certainly susceptible to iodides.

DR. HOWARD FOX: I am glad of the suggestion to try the administration of iodides by the intravenous route and to inoculate a guinea-pig. I shall try to carry this out and also to make a second biopsy and report later. My impression of this case at the outset was that blastomycosis was the most probable diagnosis and tuberculosis verrucosa cutis the next most likely one. There has been some moderate but definite improvement. The appearance of the eruption did not suggest one that was self-inflicted, nor did the patient's manner suggest it. It is a compensation case, but the patient has seemed anxious to get back to work.

ERYTHEMA AB IGNE. Presented by DR. E. F. TRAUB.

R. L., a woman, aged 18, born in the United States, presents an eruption of two months' standing. The unusual feature is the peculiar distribution on the inner aspect of the right leg and the outer aspect of the left thigh. She gave a history of sitting close to a hot radiator on her left, and the fact that she usually sat with her right leg crossed over the left accounted for the peculiar distribution. In each of the two areas the lesions occupy a space about 4 or 5 inches (10 to 12.5 cm.) in diameter; they are annular or ringed lesions consisting largely of pigmentations at the time of this presentation. Some of the lesions on the right leg, however, show a distinct inflammatory reaction, thickening and scaling.

DISCUSSION

DR. P. E. BECHET: This case presents a good example of a common condition caused by prolonged exposure to heat. I have occasionally observed the same kind of lesions after continuous use of electrically heated pads or hot water bags.

PHENOLPHTHALEIN ERUPTION WITH BULLAE. Presented by DR. HOWARD FOX.

H. L., a man, 51 years old, an Italian dressmaker, first noticed an eruption about six months prior to this presentation on the forearms, trunk and genitals. Previous to its appearance he had taken proprietary laxatives containing phenol-

phthalein. The patient stated that the eruption consisted of red patches which later became dark. From time to time new patches appeared, and the old ones would temporarily become red. He continued to take laxatives containing phenolphthalein until three weeks ago when there was a severe exacerbation of the eruption with new patches, many of them containing bullae.

When seen in Bellevue Hospital a week ago he presented well defined round and oval bright reddish plaques, varying from 2 to 6 inches (5 to 15 cm.) in diameter. Some of the lesions were covered with bullae and, in the majority at least, the horny layer of the epidermis could be removed by slight friction. The lesions were situated mostly on the flexor surfaces of the forearms, the penis, the scrotum and the lower aspects of the thighs. As exhibited at this time, the lesions are entirely dry and present some scaling following the bullous formation. The mucous membranes of the mouth are normal.

DISCUSSION

DR. E. F. TRAUB: This case is rather striking, and I am surprised to see so much inflammatory reaction and scaling still present.

DR. FRED WISE: I agree with the diagnosis. I do not know of any other substance except antipyrine that would produce such lesions.

DR. W. J. HIGHMAN: I agree with Dr. Wise and Dr. Traub.

DR. GEORGE M. MACKEE: Dr. Fox is justified in presenting the patient for two reasons: because of the inflammatory reaction, which one does not often see, and because the patient did not react to Ex-Lax but did react to argyrol. Patients may react to the drug at one time and not at another time, which makes the phenolphthalein test a little unreliable. This phenomenon was formerly thought to be caused by the fact that there are two kinds of phenolphthalein, yellow and white. It is now known that either kind will produce reactions in the same patient. It is probable that the failure to react at times is caused by a fluctuating or intermittent susceptibility on the part of the patient.

PERSISTENT ECZEMATOID DERMATITIS, RESPONDING TO INJECTIONS OF TRICHOPHYTIN. Presented by DR. FRED WISE.

R. A., a man, aged 48, a painter, applied for treatment at the Post-Graduate Skin Clinic on Aug. 22, 1931. At that time he presented discoid and disseminate patches of vesicular dermatitis on the upper and lower extremities. Traces of the eruption are still present. He complains of severe itching and insomnia. He had had many forms of treatment from four dermatologists over a period of ten years without relief. This treatment had consisted of roentgen and ultraviolet radiation.

Patch tests with paints and varnishes used in the patient's work were negative, but the trichophyton intradermal test was strongly positive. Dr. Sulzberger instituted desensitization injections of trichophytin, resulting in relief of symptoms for the first time in eleven years, according to the patient's statement. He was practically desensitized after twelve injections of trichophytin. The injections were begun on Jan. 16, 1932, a dilution of 1:30 being employed. As seen, the skin of the upper and lower extremities presents a few areas of pigmented plaques and mild eczematoid patches which are free from itching.

DISCUSSION

DR. GEORGE M. MACKEE: It is difficult to know what significance to place on the result obtained. Dr. Wise's interpretation is probably correct, but it will require many similar results to prove his conclusions. One must think of the possibility of spontaneous recovery, coincidences and the effects of various therapeutic measures, and particularly of the fact that the injections might have functioned as a nonspecific rather than as a specific protein therapy. The result

obtained by Dr. Wise is interesting and encouraging and should stimulate all the members of the society present to make similar efforts and to collect data from which may be formed a reliable evaluation.

DR. W. J. HIGHMAN: Dr. MacKee has stated the case clearly. The patient has an unproved but suggestive syndrome, indicating that possibly the condition is a tricophytid. The fact that this patient had treatment without response for ten years and then with a new method of therapy improved rapidly is impressive, whether the effect is specific, accidental or generic, and this cannot be determined, as Dr. MacKee pointed out. I hardly think that one should favor the idea of spontaneous recovery, however, since the patient did not show any tendency to recovery during a long period of time. When a sufficient number of similar experiences have been recorded it will be possible to appraise the facts. I think that this case points the way in which many cases of recalcitrant eczema will ultimately be solved.

DR. BINFORD THRONE: My associates and I began the use of tricophytin at the Skin and Cancer Hospital in 1930, and reported our results in 100 cases. A follow-up survey of these patients after about eighteen months showed the following: Thirty patients were not followed; of the remaining 70, 65 were still apparently cured. As diagnostic controls, 30 patients in whom there was no evidence of mycotic infection were tested. All of these gave negative reactions. The tricophytin that we use is prepared after the method of Professor Scholtz of Koenigsberg. A recent survey of 100 more cases shows results comparable to those obtained in the first 100. Whether or not the desensitization is permanent can be determined only by time, and that brings up the question whether it is possible to desensitize a person who has become sensitized to specific substance, either a micro-organism or a definite chemical preparation. A former case of mine has a bearing on this subject. A young woman with papulovesicular eczema on the hands and forearms had entered a nurses' training course and had become sensitized to corrosive mercuric chloride. I used Richter's method of desensitization, beginning with intradermal injections of 0.1 cc. of a 1:50,000 solution of the mercuric chloride and gradually increasing the strength of the solution to 1:1,500. She was apparently cured for about three months, but then had a recurrence of the condition; she stated that a few days before this recurrence she had taken a dose of mild mercurous chloride.

A similar case was reported by Rosenbaum (*Dermat. Wchnschr.* **92**:810 [May 30] 1931). The patient was a man, aged 40, who when a boy of 14 had had an infected finger and lymphangitis of the forearm. Mercurial ointment was applied to the forearm; after a few days a vesicular eruption appeared at the site of application. When seen at the age of 40 years, he had pediculosis pubis, and mercurial ointment was ordered. After a few days an acute dermatitis appeared over the pubes, and a few days later a similar condition developed on the forearm which had been affected twenty-six years previously.

In cases in which the condition has proved refractory to injections of tricophytin, we have been making complete chemical examination of the blood, and all of these patients have shown some disturbance of metabolism which seems to render them more susceptible to sensitization and to inhibit desensitization.

DR. C. M. WILLIAMS: I wish to thank Dr. Wise for the conservative manner in which he has presented this case, which raises several points still in dispute. In the first place, there is no positive evidence that the eruption was a tricophytid. In the first cases of tricophytid reported by Jadassohn the lesions were grouped follicular keratoses, and in every case the eruption disappeared in a few weeks. Later, other types of eruption were reported—some like pityriasis rosea, some like erythema multiforme and some like erythema nodosum—but all had the character in common that they were self-limited. I have seen a vesicular tricophytid of the palms and soles, secondary to tinea of the axilla and groin, and this also was self-limited. In all of these cases the primary infection is severe and deep, or the lesion has been irritated by treatment, especially by the roentgen rays. In recent years another type of eruption has been described as tricophytid,

but the evidence is much less conclusive. All the forms follow or are accompanied by tinea of the feet, but the primary infection is often superficial, at times unknown to the patient, and I believe—though I cannot be sure—of many years' standing; the so-called tricophytid, however, far from being transitory, is notoriously rebellious to treatment. Are these cases really instances of tricophytid? And what are to be the criteria for decision? I do not know. The analogy with syphilis may offer a clue, but a clue only, for although there is often analogy in the pathogenesis and the course of two diseases there is never identity. In syphilis there is a secondary stage characterized by transitory disseminated lesions, which corresponds, roughly, with the first described and now well recognized transitory tricophytid, and also a tertiary stage in which the lesions are not transitory, appear often at the site of traumatism and contain the organism in almost infinitesimal numbers. Are these so-called resistant tricophytids analogous to the tertiary lesions of syphilis? They may be, but as yet I know of no way of distinguishing those which are really tricophytid from all the other dermatites for which one can find no cause. It may well be that in tinea, as in syphilis, there are two types of sensitization, the one permitting the development of a widespread transitory eruption and the other permitting the development of a persistent eruption, and that for the development of this latter type a superficial infection will suffice and a prolonged infection is required.

With regard to treatment, the patient had a positive reaction for tricophytid and an eruption that is apparently cured by injections of tricophytin. Was the cure specific? Or would injection of some other protein have produced the same result? Would a natural protein, such as milk, be effective, or must the substance used be a product of cell growth? I know of no statistics bearing on this point, and until they are produced I am skeptical, though willing to be convinced.

DR. GEORGE M. MACKEE: Dr. Williams' remarks stimulate me to ask, on theoretical grounds, whether it is possible after sensitization to fungi to have eruptions caused by contact with fungi or their products? If such a theory is tenable, it might account for areas of dermatitis in which no fungi are found, without the invoking of the hematogenous dissemination of organisms. The fact that such eruptions are seldom universal and rarely attack the face may be explained on the grounds of regional sensitization, such as occurs in dermatitis venenata, dermatitis medicamentosa, urticaria and many other conditions.

DR. C. M. WILLIAMS: It may well be that a person sensitized by tinea is therefore more sensitive to any irritation, physical or chemical, than is a normal person. This would account for the prevalence of tricophytid on the hands, which are more subject to traumatism than any other part of the body. It may be that this hypersensitiveness continues as a tissue reaction after all organisms are killed, just as resistance to infection with syphilis may continue, in rabbits, after the spirochetes have apparently been destroyed.

DR. W. J. HIGHMAN: Dr. Williams is right. My experience with the syndrome of tinea that is loosely called tricophytid is that one may increase sensitization of the skin to many other factors with ill advised local treatment. I have no statistics to draw deductions from as yet, but I have the impression that roentgen radiation in acute tinea of the feet or the use of very strong antiseptics locally often favors dissemination of the disease. For that reason I am loath to use roentgen radiation, and I do not use antiseptics in high concentration under such conditions. I have found precisely the state Dr. Williams surmises to be a frequent response to stimulation created in the skin by the very agents used as fungicides. The facility with which one can convert a mild infection of the skin into a state in which the patient has polyvalent eczema, the polyvalence being a response to artificial sensitization by ill advised treatment, should give one pause. Nature, too, produces immunity. In the effort to produce immunity artificially one may convert a monovalent into a polyvalent sensitization. Thus treatment should be guarded, mild and no more energetic than the presented signs demand.

DR. C. M. WILLIAMS: The patient I mentioned with tinea of the groins and axillae in whom tricophytid of the hands and feet developed did not have tricophytid when I first saw him. Treatment of the axillae and groins with iodine produced a rather severe reaction, after which the secondary eruption appeared.

KAPOSI'S SARCOMA. Presented by DR. EUGENE F. TRAUB.

A. A., an Italian, aged 55, presented lesions which he stated had first appeared seven or eight years prior to this presentation. His past history is unimportant, and the Wassermann and other laboratory tests have been negative. The eruption is largely limited to the dorsa of the hands, encroaching on the flexor aspects of the wrists, and the lateral aspects and dorsa of the feet. He has a single isolated lesion, typical in appearance, on his right ear. The eruption in this case is unusually diffuse, and the individual nodules have fused to form large patches or plaques with what seems to be a definite advancing border. The patient is presented because of the unusually favorable response to small doses of filtered roentgen rays. The report of the biopsy was as follows: "Sections show many dense islands of cellular exudate about the blood vessels. Some of the vessels are very thin; others have thickened walls. The exudate consists of lymphocytes. Some of the blood vessels are increased in size. Not incompatible with Kaposi's sarcoma."

XANTHOMA TUBEROSUM MULTIPLEX. Presented by DR. FRED WISE.

M. P., a man, aged 27, married and in good general health, was referred to me by Dr. Beyer of New York. The nodules and tumors of xanthoma first appeared six years prior to this presentation. The lesions are located on the elbows, anterior surface of the forearms, knees, buttocks, lumbar region, thighs and dorsa and palms of the hands. On the elbows are elevated tumors from 1 to 1½ inches (2.5 to 3.7 cm.) in diameter and deeply infiltrated. The forearms present hundreds of papules varying from the size of a barley-corn to that of a lentil, many of them arranged in longitudinal moniliform streaks opposite the bends of the elbows. There were several hundred papules of typical color, induration and configuration on the portions of the body mentioned.

The patient had an operation on the gallbladder four years ago, after which the disease of the skin became aggravated. His mother is said to be suffering from diabetes and is being treated with insulin.

The dextrose tolerance test has not yet been made.

The patient has been placed tentatively on a low maintenance diet and lost 10 pounds (4.5 Kg.) in a week. It is too early to expect any results. Urinanalysis gave negative results. The icterus index was 12.5; the blood sugar was 99.5, and ketone bodies were absent in the blood. The cholesterol content of the blood has not yet been fully estimated.

DISCUSSION

DR. C. M. WILLIAMS: Has Dr. Wise ever had any good results from starvation of patients with this condition?

DR. FRED WISE: No.

DR. BINFORD THRONE: I suggest a dextrose tolerance test if it has not already been made. I have found that a simple determination of blood sugar does not give an accurate idea of the carbohydrate metabolism. I also suggest that a determination of cholesterol in whole blood, plasma and serum be made.

A CASE FOR DIAGNOSIS (ANGIOMA SERPIGINOSUM?). Presented by DR. E. F. TRAUB.

E. B., a Jew, 35 years of age, born in Poland, stated that an uncle on his father's side had a condition somewhat similar to his own, and that his daughter

had a lesion on the back of her neck which he described as similar to a hemangioma. No other members of the family seem to have been affected, and there is no history of hemorrhage in the patient or in the other members of the family. At the age of 9, before the patient came to this country a faint eruption was noted on the left arm and part of the upper left side of the chest. This eruption gave no subjective symptoms, did not disappear at any time and spread gradually. For years it remained unilateral, but in the course of the twenty-six years prior to this presentation it had spread so that it involves a large portion of the left side of the body, and also extends over the right side of the chest and arm. As presented, the eruption is still limited largely to the upper extremities and the trunk, although there is a beginning extension on the upper portion of the thighs. There is no definite configuration of the lesions except that on the left arm there is a linear streak extending down the inner aspect, with some tendency for this streak to extend to the chest. On first inspection it was difficult to make out whether the eruption was purpuric or made up of dilated tiny blood vessels. The appearance of the cayenne pepper granules was striking. Pressure with a glass slide failed to efface the lesions. There was no pigmentation nor was there any evidence that once a lesion appeared it ever changed appearance or disappeared.

The Wassermann test was negative. Chemical examination of the blood showed: urea nitrogen, 13 mg. per hundred cubic centimeters, chlorides, 479.3 mg. and sugar, 101.8 mg.

The report on the biopsy was: "Dilatation and increase in number of blood vessels. The connective tissue between the islands of blood vessels is edematous and shows degeneration. Only occasional connective tissue nuclei. The epidermis is thin and shows but a few rete pegs. Diagnosis: none."

DISCUSSION

DR. C. M. WILLIAMS: I find no evidence of hemorrhage in this case, even though the color persists under pressure. If there were intracutaneous or subcutaneous hemorrhage, in a case lasting for weeks, there should be spots showing the change of color from red through purple, and from bluish to brown, and no such spots are visible. The condition is a progressive vascular disease, characterized by dilatation of capillaries or of minute arterioles. The individual bright red spots are analogous to punctate birthmarks which are common and which also do not disappear on pressure.

DR. GEORGE M. MACKEE: When I looked at the slide I saw no hemorrhage. There are marked dilatation and congestion of the blood vessels. The picture is that of telangiectasis with little infiltration and some edema of the papillary body. I should call the case one of possibly essential telangiectasia; I doubt if the condition is angioma serpiginosum. Those who accept a very broad view of angioma serpiginosum and purpura annularis telangiectodes place a condition like this under one or the other disease. While this case may prove to be one of angioma serpiginosum, I prefer to call the condition telangiectasis until it can be proved to be angioma serpiginosum.

DR. HOWARD FOX: I do not consider this condition angioma serpiginosum and certainly not hemorrhage, as the color has remained the same for a long time and is of uniform appearance. The redness is evidently due to numerous dilated vessels or blood spaces, and I should like to know the reason, from a biologic standpoint, that there is not the slightest change in color on application of firm pressure.

DR. FRED WISE: Dr. Traub's patient does not present the lesions that are interpreted as those of angioma serpiginosum, although he is quite justified in considering that disease from the standpoint of differential diagnosis. In angioma serpiginosum there are many grossly dilated, engorged telangiectases which are often circinate and gyrate in outline and can be seen at a distance with the unaided eye. The cases that Dr. Pollitzer and I described, including two cases of

Dr. Howard Fox, presented clinically distinct vascular dilatations which are absent in Dr. Traub's patient. However, I believe that it is very doubtful whether one can speak of any "characteristic" feature of Hutchinson's angioma serpiginosum, as most of the cases described under that name vary a great deal both clinically and histologically. But in the cases which have come under my personal observation the condition certainly differed greatly in appearance from eruptions called "essential telangiectasiae," Schamberg's pigmentary dermatosis and Majocchi's purpura annularis telangiectodes.

DR. E. F. TRAUB: The patient was presented for diagnosis and with the question of angioma serpiginosum for the reasons that have been brought out in the discussion. On the other hand, this condition more nearly fits the ordinary description of angioma serpiginosum than that of any other entity with which I am familiar. The various points for diagnosis which Dr. Wise mentioned seem to fit this case, with the exception that there was no tendency to annular configuration or to the formation of patches which spead peripherally. There were satellite lesions, cayenne pepper granules and a progressive eruption beginning in the same areas noted by Hutchinson in the first cases that he described. I am not certain that I have ever seen a typical case of angioma serpiginosum, if such a thing exists, but from reading the textbook one could certainly fit this case to the picture.

SAN FRANCISCO DERMATOLOGICAL ASSOCIATION

JOHN M. GRAVES, M.D., *Secretary*

Feb. 25, 1932

CHARLES E. SCHOFF, M.D., *Presiding*

CASE FOR DIAGNOSIS. Presented by DR. CHARLES E. SCHOFF.

Miss M. O., aged 19, Italian, was born in Sacramento, Calif. The first lesion began four years ago as a dime-sized red spot on the posterior aspect of the right leg just distal to the popliteal space. During the last six months it had been fading in the center. The border was raised and reddish. There was occasional slight itching but no scaling. There had been no other changes.

The next lesion developed on the left arm two years before presentation. It began as a small papule and reached its present size in one year. A lesion appeared suddenly on the right arm and was "large when it came out." The two lesions were symmetrical, of about the same size (a half dollar), sharply defined, infiltrated and erythematous with a bluish hue and they paled on pressure. On the upper posterior aspect of the left arm there was an irregular boot-shaped lesion, 2 inches (5 cm.) long and 1 inch (2.5 cm.) wide. On the foot there was a circular lesion about the size of a dime. There were no other lesions on the body.

The patient received three injections of silver arsphenamine and 2½ skin units of unfiltered x-rays on the lesion on the right arm.

The patient had had multiple corneal ulcers of the left eye at the age of 4 years; these were treated for two years. At that time three or four Wassermann tests were negative.

The results of laboratory tests were as follows: On Jan. 12, 1930, urinalysis yielded negative results chemically and microscopically. The Wassermann and Kahn tests were both negative on Dec. 17, 1931. Examination of the blood on Jan. 9, 1932 showed: red blood cells, 4,670,000; white blood cells, 10,400; hemoglobin, 78 per cent, and color index 0.8. The differential count showed: polymorphonuclears, 71 per cent; lymphocytes, 25 per cent; eosinophils, 1 per cent; basophils, 0; monocytes, 2 per cent, and Rieder's cells 1 per cent.

Roentgenograms of the chest revealed a small central heart and aorta. No pleural pathologic changes were seen. A large paratracheal gland was observed which was calcified; it was 3 or 4 cm. in diameter and lay to the right of and

behind the aorta. A calcified gland in the right hilus was 1 cm. in diameter. The lung roots showed moderate fibrosis. Peribronchial markings were not much more dense than usual. Some minut concretions were present in the right upper lobe, representing small healed foci. There was no evidence of recent active disease of the lung (Zimmerman).

DISCUSSION

DR. CHARLES SCHOFF: Biopsy on a section from the lesion on the left forearm showed one sebacious gland with round cell infiltration and perivascular infiltration.

DR. L. R. TAUSSIG: One part of the section is suggestive of a tuberculous lesion, but is not convincing. I think that clinically it is more suggestive of sarcoid than of anything else; pathologically, the section is disappointing.

DR. H. J. TEMPLETON: I thought that clinically it was sarcoid and that there was some atrophy in the lesion on the posterior aspect of the arm.

DR. E. K. STRATTON: The description of the pathologic changes fits in with sarcoid of Boeck. My understanding is that the superficial sarcoids do not show tuberculoid arrangement of infiltration. Clinically, the condition seemed to me to be sarcoid of Boeck.

DR. CHARLES SCHOFF: I thought, since the specimen was taken from a lesion which had existed for some length of time, that there was not enough evidence on which to base a diagnosis.

DR. J. M. GRAVES: I thought that the condition might be either sarcoid or parapsoriasis. I do not believe that one is justified in making a diagnosis on a single section in doubtful cases. Perhaps if one cut serial sections through the block, one might find a definite picture of sarcoid. The fact that one little corner of the block is suggestive is not sufficient evidence, I believe, on which to make or rule out a given diagnosis.

STREPTOCOCCIC INFECTION, SECONDARILY ECZEMATOUS, SHOWING MICROPHYTIDS. Presented by DR. ERNEST CHIPMAN.

The reason for presenting this patient with lesions about both ears is to demonstrate the association of three distinct reactions and to elicit a discussion as to the best method of treatment when this combination is encountered.

The picture is first that of a classic eczema with edema, scaliness and oozing. Secondly there occur fissures and areas covered with typical impetiginous crusts. Fissures also occasionally develop at the nasal orifices and the angles of the mouth. There have also been satellite patches about the neck and shoulders, consisting of dry, infiltrated, sharply outlined plaques.

This ensemble presents, then, an eczematization, an undoubted streptococcic infection and lesions which properly, I believe, should be grouped with what Jadassohn calls "microbides."

The streptococcic lesions respond to applications of silver nitrate, but recur; the microbides yield to fractional doses of x-rays; the eczematous reaction is recalcitrant to all therapy.

DISCUSSION

DR. ERNEST CHIPMAN: I presented this case because I wanted to bring out one point, namely, that most of these cases start after a streptococcic infection. The eczematous lesion is secondary, and in this case we have a third element, that of microbides. I should like to have some one suggest a blanket formula for the treatment in this case.

DR. H. E. ALDERSON: Did the skin on other parts of the patient's body show an allergic reaction to streptococci?

DR. ERNEST CHIPMAN: In addition to the fissures at the nasal orifices and the angles of the mouth, which were pure streptococcic infections, there were the

more remote patches alluded to as "microbides." This probably means the same thing as an "allergic reaction to streptococci."

DR. H. E. MILLER: One must not forget the rôle of external contacts. Most felt hats are made of rabbit fur. I had a patient with a similar eruption which cleared up promptly when she wore a different hat. A skin test showed her to be sensitive to rabbit fur.

DR. O. F. MONTGOMERY: I had a case similar to this one. The patient had an apparent low grade microbic infection. When we tried to cure this infection, the eczema flared up. The treatment of the one condition aggravated the other. The patient then wore a wool beret without any appreciable effect on the lesions.

DR. H. E. ALDERSON: There is another factor here, the age of the patient and the type of skin. She is at the age when eczema is more prone to develop after damage to the skin. Also, I am not altogether sure from her physical appearance that she has not some degree of thyroid hyperfunction. Have there been any thyroid manifestations?

DR. ERNEST CHIPMAN: I have not seen any.

DR. E. K. STRATTON: Why would it not be logical to use streptococcic vaccine subcutaneously, if these lesions are microphytids. Injections of trichophytin have been so successful in the treatment of lesions due to fungi that I should be tempted to try the same principle of therapy in this case.

LICHEN NITIDUS. Presented by DR. HARRY E. ALDERSON.

In Mrs. G. B., a Filipino, aged 21, an eruption began on the sides of the neck and right shoulder two years before presentation. These gradually spread. They became numerous in the regions mentioned and showed no tendency to coalesce. Individual papules were about 2 mm. in diameter, of the color of normal skin, somewhat shiny and flat. There were no subjective symptoms. The patient was very nervous and did not sleep well, but otherwise was well. There was no family or personal history of syphilis, and the Wassermann reaction was negative. There was no evidence of past or present tuberculosis. The urine was normal. A complete medical examination revealed no abnormalities. The blood count was normal.

LICHEN NITIDUS. Presented by DR. HARRY E. ALDERSON.

E. B., a boy, aged 9 years, had had an eruption for seven years. There were numerous tiny, milia-like lesions scattered all over the body. Some of the larger ones showed tiny central depressions. There were no subjective symptoms. There was no evidence of past or present tuberculosis or any other serious constitutional disease. The family history was unimportant.

Sections of lesions in both this and the preceding case were prepared by Dr. Stuart C. Way and showed the following picture, which is typical of lichen nitidus: Histopathologic examination of tissue removed from the left axilla showed the stratum corneum to be somewhat thickened. The interpapillary processes were either absent or slightly flattened in the neighborhood of the tubercles.

The pathologic changes present in the corium were limited to the papillary layer. The tubercles which occurred about the follicles and independently of them were well circumscribed, being pushed up closely against the basal layer of the epidermis, and composed of numerous lymphocytes, fibroblasts and epitheloid and giant cells.

While some of the capillary vessels were moderately dilated, evidence of an inflammatory process, so prominent in similar dermatoses was lacking.

Orcein and Weigert stained sections showed destruction of the elastic fibers and collagen within the tubercles themselves.

Fig. 1.—Lichen nitidus.

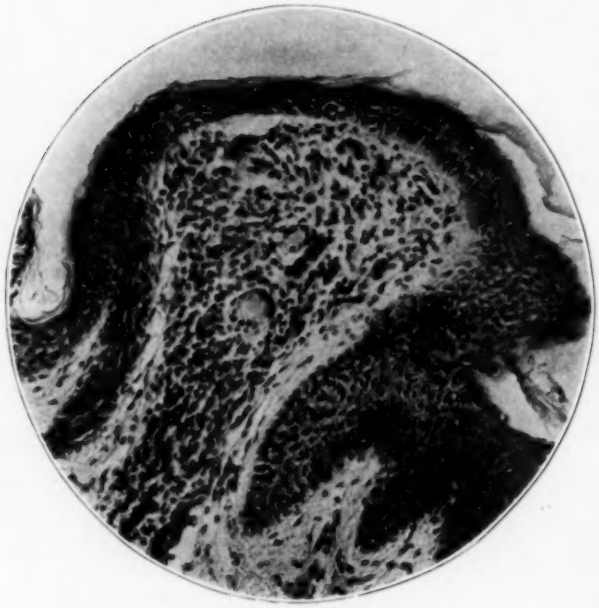

Fig. 2.—Lichen nitidus.

In the areas studied, many of the tubercles failed to show giant cells, but when they occurred they had a dropsical appearance similar to a phagocytic cell that has ingested fat globules.

The histopathologic changes in both cases were quite similar except that in the child the tubercle displayed a tendency to occur about the follicles and contained fewer giant cells.

PITYRIASIS RUBRA PILARIS. Presented by DR. MERLIN T. R. MAYNARD.

B. C., a boy, aged 9 years, was first seen in January, 1932, complaining of an eruption all over the body for the past one and one-half months. Diphtheria toxoid was given six days before the first appearance of the eruption. The second injection of toxoid was given and the eruption became considerably worse. Since that time the eruption has extended until the face, palms, forearms, back, chest and particularly the elbows and knees are rather thickly covered. The palms have exfoliated, and the skin has become considerably thickened.

The past history is insignificant except that the patient had diphtheria and was given antitoxin at the age of 2 years. The diagnosis of pityriasis rubra pilaris was made, and the patient was given autohemotherapy on February 3. On February 6 the itching was considerably lessened. On February 13 his face showed definite improvement. This improvement has continued up to the time of presentation.

DISCUSSION

DR. MERLIN MAYNARD: I am interested in your opinion as to whether there is any relation between the injections of toxoid and the eruption.

I have given the patient potassium arsenate and autohemotherapy. He has improved under treatment. Whether the improvement is due to the potassium arsenate or to the autohemotherapy, or whether the patient would have improved without either, I cannot say.

DR. H. J. TEMPLETON: I think that clinically this is a case of pityriasis rubra pilaris, and it is within the limits of likelihood that the diphtheria toxoid precipitated the eruption.

I saw a similar case under Oppenheim: one of clinically typical pityriasis rubra pilaris. Oppenheim agreed with the clinical diagnosis, but predicted that within a few days the lesions would develop into an arsphenamine dermatitis, as the patient had been receiving arsphenamine. His prediction proved to be correct. The type of eruption that occurs depends on the type of person. One might say that this patient was predisposed to pityriasis rubra pilaris and that the diphtheria toxoid precipitated the attack.

DR. HIRAM E. MILLER: I have seen a case in which vaccination was the disturbance that pulled the trigger and started the eruption.

DR. HOWARD MORROW: I should like to see Dr. Maynard put that child in a hospital and give him some protein shock. I do not think that the arsenicals will do him any good, and there is always the danger of arsenical keratoses.

CASE FOR DIAGNOSIS. Presented by DR. ERNEST K. STRATTON.

A. B., a man aged 51, had a benign warty growth of the lower lip and buccal mucosa with unusual distribution, associated with leukoplakia.

On both sides of the lower lip near the commissures there were warty elevated circumscribed lesions, 2 cm. in diameter. The one on the left side was of two years', and the one on the right of eight months', duration. On the inside and involving the entire lower lip connecting these warty growths, the mucous membrane was white, hypertrophied and furrowed. The same condition extended onto the mucous membrane of the cheeks on both sides for a distance of 3 cm.

The patient had a chancre when 17 years of age, took medicine by mouth and by rubs and was told that he was cured. There were no symptoms until four years before presentation, when duodenal ulcers were found. His first Wasser-

mann test, made eight months ago, was +++. He received inadequate treatment (a few injections of bismuth at irregular intervals), and stated that the condition of the mouth had become much worse since that time.

A Wassermann test of the blood made the week before presentation was +++. The spinal fluid was normal. A biopsy failed to reveal malignant changes.

DISCUSSION

DR. HOWARD MORROW: I think that the condition is leukoplakia developing in a syphilitic mouth. I believe that the entire area should be destroyed with desiccation.

DR. N. N. EPSTEIN: I think, as Dr. Graves does, that it is easy to miss something of importance when one looks at only one section of the block of tissue. Serial sections frequently reveal changes otherwise overlooked.

DR. E. K. STRATTON: When I took the section I went deep enough to get some subcutaneous tissue.

I thought that we would give this man a month's trial with antisyphilitic treatment. If he does not improve we can try something more radical.

DR. H. E. ALDERSON: I do not think that this can be called a benign lesion. I think that electrocoagulation or cauterization should be used if an operation is not feasible, or radium seeds might be introduced. I have seen lesions of this sort in the mouth progress rapidly under injections of arsphenamine, as arsenic is an epithelial stimulant.

DR. CHARLES SCHOFF: I presented a man several years ago who had a lesion on the buccal surface of the right side of the mouth, somewhat similar to the lesion that Dr. Stratton presented. There was no evidence of malignancy in the biopsy. We were requested to perform another biopsy. The report came back that there was no malignancy present. That man is in the hands of a cancer quack in Kansas at present, and his wife says that the whole cheek has been destroyed by the growth. That lesion simulated the one shown here; yet the sections did not show malignancy. We desiccated and electrocoagulated the area thoroughly at the time and thought we had completely removed it.

DR. H. J. TEMPLETON: I should like to mention a point of importance in treating epithelioma of the lower lip, if one believes that coagulation and electrocauterization are the best methods. The anesthetizing of the lower lip is difficult. It is dangerous to use ether or to inject procaine hydrochloride close to the lesions. If a double mandibular nerve block is performed, one can work on the patient without pain and without the drawbacks of a general anesthetic. If this were my case I should perform a double mandibular block, take out a piece of tissue and send it to the pathologist for diagnosis.

DR. E. K. STRATTON: I did not present this case with a diagnosis of syphilis. I merely mentioned the fact that the patient had had syphilis twenty years ago. In view of the fact that the biopsy did not show malignancy, I see no harm in giving the patient arsphenamine under careful observation. After a proper interval I intend to remove the lesion by means of electrocoagulation. I think the double mandibular nerve block an excellent suggestion.

CASE FOR DIAGNOSIS. Presented by DR. H. J. TEMPLETON for DR. C. J. LUNDSFORD.

In a man, aged 21, while under treatment for an infectious eczematoid dermatitis, a fissure developed in the anus in November, 1930. The lesion was indurated and we obtained a history of sodomy. Dark-field examinations repeatedly yielded negative results. Dr. Dudley Smith performed a proctoscopic examination. He repeatedly cultured the material from the rectum and stained many slides. They were all negative for the gonococcus. The Wassermann reaction of the blood has been repeatedly negative. Biopsy showed only nonspecific chronic inflammation. The lesions about the anus finally presented the picture of the cock's-comb type

of verrucous-like condyloma with some destructive ulcerations. We scraped the edges repeatedly and examined the material for Donovan bodies, with negative results. At no time was there an unusual amount of inguinal adenopathy. The patient received two injections of 0.45 Gm. of neoarsphenamine intravenously a week apart. The injections acted as a general tonic, causing a gain in weight, but had little effect on the local lesions, except to decrease pain and tenderness. We felt that such a therapeutic test for syphilis was negative, and gave the patient six injections of antimony and potassium tartrate, one ampule at each injection, at weekly intervals. The patient felt worse generally and there was no local improvement.

Dr. V. G. Alderson examined the stools for parasites. Giardia were found, and ipecac and calcium phosphate were administered with benefit. Inoculation of guinea-pigs was not done. The patient had gonorrhea several years ago. He is presented for diagnosis, and for the suggestion of other means of approach to diagnosis and treatment.

DISCUSSION

Dr. H. J. Templeton: This case has been worked up thoroughly, with the exception of the inoculation of guinea-pigs. Having watched the patient for a number of months, I feel that inoculation of guinea-pigs may clear up the diagnosis. I lean toward a diagnosis of tuberculosis.

Dr. N. N. Epstein: Gonorrheal proctitis must be considered in this case. Has a complement-fixation test for gonorrhea been performed?

Dr. H. J. Templeton: There were negative smears, but no complement-fixation test.

Ringworm. Presented by Dr. Ernest Chipman.

A patient with typical ringworm of the scalp is presented because so many patients are seen who recover following simple local applications without recourse to x-rays. This suggests the thought that in this territory we are dealing with a strain of fungus less virulent than that found in other countries and even in other parts of this country.

We have found that these patients do well following the use of a 1 per cent basic fuchsin ointment, although I have seen them clear up with the use of ammoniated mercury. I should like to add that without any definite statistics at hand, I believe that ringworm of the scalp is not only less virulent in this part of the world but of less frequent occurrence.

DISCUSSION

Dr. H. J. Templeton: I should like to ask a question about the treatment of ringworm of the scalp. Many dermatologists in the west believe in the difference in virulence of various strains and use local therapy. Have I been wrong in treating them with epilation? I was taught in the east to do so, and I use it in all cases of ringworm of the scalp. Have I been bombarding these patients too heavily?

Dr. Frances Torrey: In the last few months we have had many patients in the clinic and have treated them locally with Kingery's solution. We have had good results.

Dr. Thomas Clark: In the Alameda County Health Center we have used oleate of copper to clear up our cases.

Dr. Charles Schoff: How long does it take to clear them up with oleate of copper?

Dr. Thomas Clark: Seldom more than a month.

Dr. J. M. Graves: Kingery's solution (thymol, 0.5 per cent; oil of cinnamon, 1 per cent; solution of gutta percha, N. F. IV, sufficient to make) causes smarting and burning, but the patients do nicely with it.

Dr. H. E. Alderson: The old Jackson formula of iodine crystals in goose grease is still useful.

PHILADELPHIA DERMATOLOGICAL SOCIETY

J. P. Guequierre, M.D., *Secretary*

March 4, 1932

Jacob M. Schildkraut, M.D., *Presiding*

Female Sex Hormones in Alopecia Areata. Presented by Dr. S. S. Greenbaum.

R. P., a girl, aged 7 years, had received intramuscular injections of urine (in a dosage of 5 cc. given twice a week) obtained from a pregnant woman (nine months). Injections had been given since October, 1931. There was a slight regrowth of hair; however, the remarkable fact was an increase of 4 inches (10 cm.) in the height of the child in four months. It has been claimed that the urine in pregnancy contains no growth-stimulating hormone, but this case appears to refute that claim.

DISCUSSION

Dr. J. F. Schamberg: I do not think any definite statement can be made at this time. The use of the female sex hormone in the renal secretion is rather new; I know of no therapeutic results in cutaneous diseases that have been alleged for it. The fine, downy growth on the scalp of the child may be due to many causes. The rapid growth is interesting, but that is all one can say. It would require a wider experience to say whether or not there is an element for growth in the secretion, although such a gain in height in so short a time is unusual.

Lupus Vulgaris. Presented by Dr. J. M. Schildkraut.

A colored woman, aged 38, presented an irregular patch, involving the left cheek and left ala of the nose, of seven years' duration. It was reddish brown and was bordered with infiltrated translucent nodules. There was also a smaller patch below the large patch, and one on the left side of the nose near the eye. The Wassermann test was negative.

DISCUSSION

Dr. J. F. Schamberg: I agree with the diagnosis. Of course, the border does not look unlike a syphilid; however, not only is the Wassermann reaction negative, but the course of the disease is that of tuberculosis and not that of syphilis. In seven years there has been healing of the center, which was formerly ulcerated, and perhaps a moderate spread. A tertiary syphilitic patch spreads almost as much in a month as a tuberculous patch does in a year. The indolent course in this case indicates tuberculosis.

Dr. John H. Stokes: I want to remark on the occasional indolent course of syphilis. I have seen syphilitic lesions distinctly resembling lupus vulgaris in which there was a duration of fourteen years. I think that the borderline is sometimes deceptive. A biopsy has not been performed in this case; it would be desirable.

Dr. J. M. Schildkraut: The center of this lesion was ulcerated and pustular, but it has healed under treatment with a paste of 4 per cent salicylic acid and mercury. The patient also has adenitis of five years' duration and a hacking cough. She is on the Gerson-Sauerbruch diet.

Dr. F. D. Weidman: Of course, the race of this patient does not help one to analyze the tissue processes. Although it is difficult to appraise erythema in the Negro, it can be done within limits. Even with that handicap, it seemed to me that there was surprisingly little infiltration and erythema around the lesions. I think that this observation would be almost incompatible with syphilis;

on the other hand, an epithelioma of an extremely slow-growing type may be present in this patient. I agree with the diagnosis of lupus vulgaris, however. The importance of a biopsy was a well taken point. I should like to see to what type of tuberculosis this condition belongs. I feel that histologically, the tissue would exhibit little of the lymphoid cell reaction, and that the tubercle would be of the endothelioid type, with considerable giant cell formation.

ARSENICAL DERMATITIS. Presented by DR. J. M. SCHILDKRAUT.

S. T., a woman, aged 40, presented a mottled, pigmentary condition on the sides of the neck and the backs of the hands and wrists, under the breasts and on the inner aspect of the thighs, of ten years' duration. She also had keratosic lesions on the backs of the hands. Arsenic was demonstrated in the urine. There was no history of her having taken drugs.

DISCUSSION

DR. S. S. GREENBAUM: I do not see why one could not call the condition acanthosis nigricans.

DR. F. D. WEIDMAN: I do not like to object to the diagnosis of arsenical dermatitis without having something better to offer; however, it seems to me that the localization is more circumscribed and more regional, as for instance, under the breasts, than is commonly seen in arsenical conditions. This woman is around the climacteric period, when melanoderma is known to occur. I recall one spectacular case, in which broad patches of pigmentation appeared suddenly after radium treatment of the uterus for a fibroid tumor. The condition was even more extreme than in this case, and I think that it would be wise to inquire about the history of the menopause in this patient and to ascertain whether any particular modalities have been practiced on the internal genitalia.

DR. J. M. SCHILDKRAUT: The history states that the condition is of ten years' duration, having started when the patient was 30. Examination of the urine showed arsenic, which led to the diagnosis.

DR. ROSE HIRSCHLER: This patient certainly has pruritic nodules on the backs of the hands which are suggestive of nodular prurigo. I could not find out whether she had the lesions before the pigmentation. She may have had the nodules first, and long continued treatment with arsenic may have been given, followed by storing of the arsenic in the body tissue, which then may have caused the pigmentation.

DR. J. M. SCHILDKRAUT: The history stated that the nodules appeared after the pigmentation.

DR. R. GILMAN: I think that the distribution is indicative of arsenical dermatitis, regardless of the fact that there is no history of the ingestion of arsenic. There are numerous sources of arsenic, such as arsenical wall paper, local applications and foods, and arsenic is used in horticultural industries. The distribution and the fact that arsenic is found in the urine are strong evidence for the diagnosis.

DR. ROSE HIRSCHLER: This patient says she has been taking medicine for a long period. How do we know that the medicine was not arsenic?

DR. J. F. SCHAMBERG: This woman presents a circumscribed pigmentation on different parts of the body, with some keratosic nodules on the backs of the hands. These nodules are not particularly suggestive of those seen in arsenical keratoses. I think that the presence of arsenic in the urine, unless it is estimated quantitatively and is determined to be considerably in excess of normal, means little, because so much arsenic is used in spraying vegetables and fruit that one can acquire a certain amount of arsenic in the system. If one examines the hair of rabbits one finds arsenic, and human hair contains arsenic. It is one of the few metals that goes rapidly into the hair. The work of Fordyce, Rosen and Meyers shows that they found arsenic in the urine and spinal fluid of normal

persons, so that one would have to be careful in assuming that, because arsenic was found in the urine and pigmentation on the skin, this pigmentation is arsenical. In a case of this kind I should be willing to say only that there is pigmentation of undetermined origin; it may come from a great variety of causes. It is often caused by an internal condition.

DR. S. S. GREENBAUM: If one makes a close examination of the lesions in the axillae, a definite hypertrophy of the skin is noted. I still feel that that condition should be considered, and that acanthosis nigricans is a possible diagnosis.

DR. JOHN H. STOKES: I should like to indorse Dr. Schamberg's remarks with reference to the uncertainties attached to the urinary determination of arsenic. A great deal of painstaking work on arsenical determinations has gone to scrap because of failure to control the many factors involved, including the physiologic presence of arsenic in the secretion or fluid examined, and the failure to use arsenic-free reagents in making the determination and arsenic-free glassware and other apparatus. This metal is present so universally that I believe there are only one or two concerns in this country that undertake to make absolutely arsenic-free reagents. Therefore, most commercial determinations probably would be subject to this factor of error, and I have repeatedly had positive arsenic determinations on the urine of patients who have had no contact with arsenic, including arsenical medication in the ordinary sense.

ACNE URTICATA (KAPOSI). Presented by DR. S. S. GREENBAUM.

H. K., a white man, aged 37, presented an eruption on the face of three months' duration consisting of papules which were extremely itchy and on the summits of which minute vesicles sometimes developed. The pruritus was so marked at times as to awaken the patient at night. He had had attacks for the past eight years, the longest period of freedom being four months. The Wassermann test and urinalysis gave negative results.

DISCUSSION

DR. F. D. WEIDMAN: I do not know what acne urticata is. Dr. Stokes just told me that it was a particular form of acne, beginning with urticarial lesions. As I see this patient, it seems that the condition is a folliculitis, just as sycosis vulgaris is. After that, if one translates the clinical symptoms into terms of pathology, one wonders what there is about a particular brand of sycosis that determines its change to urticaria. When this condition started, were the lesions those of urticaria or of folliculitis? If it turns out that the condition was a folliculitis in the beginning, it is interesting to speculate what order of changes determined that in its initial stages the condition should be itchy.

I have gone to this length, perhaps unnecessarily, because I think that conditions in the follicles are not commonly given the finer analysis that they deserve. For instance, one thinks of the follicle as being little more than a depression of the skin in which secretions can accumulate and infection occur. I should like to call attention to the fact long known to physiologic chemists that bacteria can act on fatty substances (lecithin) and decompose them into an irritating substance, choline, and that this substance has an order of irritativeness that is akin to that of histamine. I think that such vagaries should be considered when one attempts to determine why there are discrepancies in the clinical symptomatology in conditions that otherwise appear to be typical morphologically. In respect to the folliculitis, if the pathologic physiology is duly inquired into (the split products of fats, particularly choline), it may bring light on such conditions.

DR. JOHN H. STOKES: I saw a patient with lichen urticatus presented by Dr. F. G. Harris before the Chicago Dermatological Society, where the condition aroused remarks similar to those just heard. Since that time, I have seen six cases. The initial lesion is distinctly urticarial. I think that of the six cases that I have seen four or five occurred in women. Lesions appear in crops somewhat as urticarial lesions in lichen urticatus appear in a young child. By crops,

I mean that two, three or four lesions appear in the course of a forenoon, with intense pruritus and a distinct wheal. These are followed in a surprisingly short time by vesiculopustular changes, and then the condition runs the course of the nodular type of acne. The onset is particularly interesting, because one can see an urticarial phase in the common acne if one punctures with a comedone lance or Graefe knife a series of follicular lesions that are almost ripe. In certain types of cases the lesion that is punctured becomes urticarial, possibly from the liberation of choline in the cyst or follicle. Then in the immediate vicinity, a number of lesions which were not punctured and with which there was no interference also become urticarial, so that it is easier to pick out the surrounding cystic accumulations in the follicles because the terrain in which they lie becomes urticarial. I have seen reference in the literature to an allergic reaction in acne. This reaction was asserted to be an allergic reactivity of the patient toward the micro-organism present in his acne lesions. I do not think that this explanation is as satisfactory as the one suggested by Dr. Weidman, but it shows that in many cases of acne there are potentialities of urticaria, either because of the allergic state of the person or because of locally elaborated urticariogenic substances. Acne urticata possibly starts with an abrupt urticarial reaction to the growing colony of organisms and their products of decomposition, and then follows the course of acne.

DR. S. S. GREENBAUM: I agree that both simple acne and sycosis vulgaris must be considered, but there are no comedones or pustules, and the patient is 37 years old. I will admit that the condition of acne urticata is not so well known, and that there is some dissension as to what is meant by it. It is described by Darier under the same term as neurotic excoriations or excoriated acne of young girls, and by others as a definite clinical concept of a papule that is extremely itchy, and that appears and reappears in crops, usually in women. I have seen several instances of this condition, two in males and one in a female. Some physicians think that acne urticata should be grouped with acne necrotica, and I feel that some of the lesions on this patient, especially those on the scalp, are somewhat suggestive of the latter condition. The lesions appear suddenly, even awakening him from sleep as a result of the marked pruritus.

DR. JOHN H. STOKES: I treat patients with such a condition with roentgen rays much as in ordinary acne, and I give liberal doses of calcium. I think that the man's age is not a necessary argument against acne, because this condition certainly is not limited to the pubescent years. It is relatively frequently seen in women in the thirties, and I think that the relation to acne necrotica is quite suggestive.

PITYRIASIS ROSEA OF UNUSUAL DISTRIBUTION. Presented by DR. C. S. WRIGHT.

Eighteen days previous to presentation, a man, aged 33, observed the development of a few lesions on the chest, which he regarded as of no significance. There was no history of a large primary plaque, but each day a few more of these lesions appeared. Ten days after the eruption appeared, he entered the skin clinic at Temple University School of Medicine, where he was seen by Dr. Wright, and the case was diagnosed as one of pityriasis rosea. At the time of presentation, lesions had developed on the tops of the feet, the bends of the elbows and the webs of the fingers. There was no extension of the eruption over the body.

The patient was presented before the society because of the unusual distribution of the eruption on the body.

PITYRIASIS ROSEA URTICATA. Presented by DR. FRIEDMAN for DR. C. S. WRIGHT.

A white woman, aged 32, first appeared at Dr. Wright's clinic at Temple University, on March 1, 1932, with an abundant generalized eruption over the face, neck and anterolateral aspects of the trunk, arms and thighs. There were some

isolated lesions over other parts of the surface of the body which were characteristic of pityriasis rosea. The predominating type was the markedly raised papular lesion with plaques, a number of which were of the circinate and oval variety. The case was presented because of a number of unusual features.

First, the eruption first appeared on February 22, as a markedly raised, reddish, intensely itching patch located on the left side of the chin immediately below the labial commissure. Secondly, this lesion was followed by an eruption of lesions somewhat smaller but otherwise similar, involving the rest of the face; in seven hours, the eruption also involved the neck, the upper part of the chest and part of the abdomen. According to the history, the eruption was pruritic, pigmented and rather elevated. In the third place, the case was of unusual interest because of the associated constitutional symptoms, which were severe. On the day following the appearance of the eruption, the patient vomited five times and had severe generalized aches and pains and a severe pain in the lumbosacral region. The eruption multiplied on that day, and on the morning of the third day the patient was still rather ill. However, the temperature subsided to normal, and the pains disappeared during the day. The patient went to see a physician, who diagnosed the condition as urticaria and prescribed accordingly.

The incubation period of only three hours between the appearance of the primitive plaque and that of the secondary lesions of pityriasis rosea is the first on record. Because of the markedly reddish, raised, intensely itching nature of the lesions, we are inclined to make a diagnosis of pityriasis rosea urticata, as described by Hallopeau and by Vorner. The lesions on the face have disappeared, and the other patches are undergoing involution with clearing, and are assuming an annular configuration.

DISCUSSION

DR. JOHN H. STOKES: This pair of cases is interesting. Unusual manifestations of ordinary diseases ought to be shown more frequently; it is not necessary to wait until there is a rare disease. I think that this condition is an important variant of the pityriasis rosea picture. I imagine that each year cutaneous diseases in some unusual form are seen. This year pityriasis rosea has been particularly florid, tending to be associated with constitutional symptoms and a hematogenous distribution phase with mycotic correlations. In several of the patients I have seen, there have been distinctly mycotic tendencies toward flexural distribution, etc., and the cases just shown fit well into this group.

The first case, that of the man, was of what I call inverted pityriasis rosea, in which the conventional distributions are reversed and the majority of the lesions occur on the extremities while the trunk is relatively sparsely involved. In such cases the face is often involved above the line of the jaw, which is unusual in conventional pityriasis rosea. This winter I have noted more clearly than ever before that the floridness of pityriasis rosea is affected by the temperament of the patient. The highly nervous or severely strained person has a much more florid, itchy and conspicuous type, with a tendency toward the urticarial, while more phlegmatic persons have blander manifestations. That is only an impression, but it is interesting in connection with these cases.

DR. J. V. KLAUDER: I think that the first case shown can be placed in the category of localized forms of pityriasis rosea. My observation is that this form is not uncommon, although it is not mentioned in most textbooks on dermatology. The areas of predilection are the axillae and the upper inner parts of the thighs. Lesions exist in these areas without the disease appearing elsewhere. Lesions on the dorsa of the feet are rare. My impression is that lesions on the dorsa of the feet are usually associated with vesicles.

DR. JAY F. SCHAMBERG: I think that if there is one disease that runs an aberrant course and is characterized by aberrant symptoms it is pityriasis rosea. One may see all sorts of variations from type. Some patients have violent itching and others are free from it. Instead of the usual six or seven weeks, it may last only three weeks, or it may last for two or three months. The type of eruption

may vary considerably in its distribution and appearance. I know a physician, a general practitioner, who three years in succession had a case of pityriasis rosea, and he failed to recognize it each time. That is because of aberration from type, which one must always keep in mind; the two cases from the Temple Medical School presented by Dr. Wright and his associate this evening illustrate this departure from what might be called a normal type. I think that both are cases of pityriasis rosea; one appearing with explosive symptoms, suggesting an acute exanthem, which occurs from time to time, and being associated with systemic symptoms. In most cases there are no general systemic disturbances. The other case presented marked aberrations of distribution. I believe that it is always well for us to bear this in mind and to realize, moreover, that we are somewhat spoiled in expecting to see textbook cases of most diseases. Infectious processes present a reaction between the patient and the disease, and the patient is always a variant factor; therefore, one cannot expect the resultant disease to be always according to type.

TUBERCULOSIS OF THE SKIN. Presented by DR. BUTTERWORTH for DR. J. F. SCHAMBERG.

M. B., a colored woman, aged 27, went to the Graduate Hospital clinic two years before presentation, complaining of night sweats, cough, with blood-streaked sputum and loss of weight. A tentative diagnosis of pulmonary tuberculosis was made. Roentgenograms revealed definite evidence of extensive fibrosis in the hilar region. Examination of the sputum at that time gave negative results for acid-fast organisms.

About eight months later, soreness, photophobia and failing vision in the right eye developed. A diagnosis of iritis and keratitis was made. Wassermann reactions were repeatedly found to be negative. A course of mercurial inunctions was given, without any change in the condition.

A year before presentation, a papular and nummular eruption appeared on the back of the neck and spread, involving the face, the trunk and the upper part of the thighs. During the past two years the patient had lost 12 pounds (5.4 Kg.). She had an occasional coughing spell followed by vomiting, but no hemoptysis. She had undergone an operation for a pelvic ulcer nine years before presentation. The family history was negative for tuberculosis. The patient was single. She did her own housework.

In addition to the condition of the eyes and skin, physical examination revealed dulness at the apexes of the lungs. Vocal resonance was increased in these regions, and the breathing was bronchovesicular. The spleen was definitely palpable two fingerbreadths below the costal margin. There was general adenopathy. The liver was palpable one fingerbreadth below the costal margin.

The last roentgen examination of the chest made a year previously revealed extensive fibrosis throughout both lungs, which was reported as unquestionably tuberculous. Wassermann tests of the blood were repeatedly negative, as well as a recent provocative Wassermann test.

Acid-fast organisms were never found in the sputum. The patient had failed to react to 0.01, 0.01 and 0.1 and 1 mg. of old tuberculin injected intradermally. Guinea-pigs had been inoculated, but it was too early for a report. Urinalysis gave negative results. A section of one of the annular lesions on the back was sent to Dr. Weidman. The blood count was as follows: red cells, 4,470,000; white cells, 7,300, and hemoglobin, 72 per cent; a differential count showed: lymphocytes, 36 per cent; polymorphonuclears, 58 per cent; eosinophils, 4 per cent, and basophils, 2 per cent.

Dr. F. D. Weidman made the following report on the histologic sections: The sections sent to me showed definite tubercles, and they were of a surprisingly pure endothelioid type; with extreme difficulty lymphoid cells could be found in the periphery. The patient presented appears similar to the one Dr. Klauder and I showed here many times a good many years ago. It may be recalled that subsequently Dr. Klauder reported that perhaps these cases were examples of

avian tuberculosis. If there is anything distinctive in the avian tuberculosis of man, and if that old case was one of that condition, we ought to consider that condition in the patient presented. From the histologic examination I do not think that there is any possibility that this lesion could be gummatous. All of us have had the experience of being unable to distinguish histologically between syphilis and tuberculosis, and in the patient presented there is a refreshing example of an exceptional rash in which the histopathologic observations are undoubtedly against a diagnosis of syphilis. The course of the illness in the patient to whom I have just referred was unfortunate. At necropsy there were cavities and indubitable evidence of acid-fast organisms. A particularly puzzling phase was that, although biopsies were performed on the skin, and lymph nodes the size of lima beans were excised from the cubital region and large masses of this material injected into guinea-pigs, tuberculosis was not produced in the animals. That fact strengthens the thesis that this was not a bovine or human strain of the tubercle bacillus.

DISCUSSION

DR. J. V. KLAUDER: The case conforms to the picture in the case reported by Dr. Fred Weidman and me (Multiple Sarcoid-Like Granulomas of the Skin of Undetermined Nature, ARCH. DERMAT. & SYPH. **12**:171 [Aug.] 1926; **13**:675 [May] 1926). Characteristic features of the lesions in our case and in the one now discussed are infiltrated scaly plaques which become circinate and involute with atrophy. Some lesions follow the natural line of cleavage of the skin, in a manner comparable to that of the lesions of pityriasis rosea.

DR. F. D. WEIDMAN: Now that I have seen the patient, I think that the condition resembles even more closely that in the case to which Dr. Klauder refers, which we reported as a sarcoid-like granuloma. I just conferred with Dr. Dörffel, who is visting from Königsberg, Germany. He stated that in Germany cutaneous lesions of this sort are regarded as being of the order of sarcoid. In these two cases, in addition to sarcoid, there is marked involvement of the lymph nodes; yet, in spite of that enlargement, there are no signs of tubercle bacilli in the nodes.

DR. JAY F. SCHAMBERG: I have seen this patient several times, and the appearances are of a great deal of interest. I think that one must realize the fact that tuberculosis has more widely varied expressions than one was disposed to believe years ago. Not only are there the chronic types of lupus vulgaris, verrucous tuberculosis, the ulcerative type near the mouths of mucous openings, and, occasionally, the miliary form, but there are forms such as those exhibited by Dr. Klauder and Dr. Weidman, the nodular type, and cases of this type which have a more acute course. In appearance this condition is more like a syphilid than like tuberculosis of the skin, yet from the concomitant evidence in the patient and the microscopic examination, I think that such a diagnosis is excluded. In recent years more varied types of the cutaneous expression of tuberculosis and, furthermore, types with a more acute and often a more serious course have been seen.

DR. V. C. GARNER: Morphologically, the condition looks like the type that Sweitzer described under the term tuberculosis en plaque.

ERUPTION FOLLOWING ADMINISTRATION OF BROMIDES. Presented by DR. J. K. HOWLES for DR. J. F. SCHAMBERG.

A colored girl, 14 years of age, with a definitely syphilitic background, had had a condition of the eyes suggestive of interstitial keratitis nine years before presentation. At that time an operation for ulcers of the eyelid had been performed, after which her sight was impaired. Some time before presentation she had had a complication similar to the condition of nine years previously, and at the same time she began to take a tonic, nervine. After several doses were taken, a rash broke out, and the patient was sent from the eye clinic to the dermatologic clinic, where the case was diagnosed tentatively by Dr. Schamberg as an eruption

due to drugs. The patient was given boric acid lotion; tests of the blood were made, and the urine was examined, particularly for bromides and iodides. The patient returned after using the lotion and discontinuing the internal medicine. A qualitative examination of the urine revealed 0.1 mg. of sodium bromide. The blood count showed anemia. There were: 3,458,000 red cells and 11,000 white cells; differential count revealed: hemoglobin, 44 per cent; lymphocytes, 12 per cent, and polymorphonuclears, 84 per cent. The Wassermann reaction was strongly positive.

A week before presentation the picture was much more acute; there was a slight febrile condition, and the eruption was much more marked. At that time, there was a pustular vesicular eruption.

AN UNUSUAL TYPE OF RECURRENT SECONDARY SYPHILIS. Presented by DR. GEORGE V. KULCHAR for DR. JOHN H. STOKES.

A white man, aged 23, presented recurrent annular lesions over the anterior surface of both legs of nine months' duration, and, in addition, indurated papules over the penis and scrotum. Sixteen months before presentation he had had a primary lesion on the penis, followed by erythematous maculopapules over the trunk and extremities three months later. At that time he had received treatment by mouth only. For the past year he had had a mild thyrotoxicosis, for which he was under treatment.

On examination, moderately infiltrated annular lesions almost undistinguishable from psoriasis were seen over both anterior tibial regions. There were, however, faint signs of central atrophy and pigmentation and a moderate amount of non-contractile scarring. The periphery of the lesions was psoriasiform. Over the shaft of the penis, glans and scrotum there were a number of indurated, annularly arranged papules and plaques. Repeated dark-field examinations of the penile lesions gave negative results. The Wassermann reaction of the blood was strongly positive.

DISCUSSION

DR. JOHN H. STOKES: On looking at this patient the first impression is that one is dealing with psoriasis. The lack of induration is striking. There is a psoriasiform process in the scalp. I saw him for the first time just before presenting him in the clinic, and by the end of the session, I was unable to state that he did not have psoriatic lesions together with psoriasiform syphilis. Therapeutic tests will not settle what these lesions are, because psoriasis tends to clear up under a limited amount of arsenical therapy.

LUPUS ERYTHEMATOSUS MARKEDLY IMPROVED BY INTRAMUSCULAR INJECTIONS OF BISMOCYMOL. Presented by DR. S. S. GREENBAUM.

R. P., a man, aged 23, presented fairly marked lesions of lupus erythematosus around both eyes and eyelids of eighteen months' duration, for which he had received a gold preparation, and as a result of which a severe exanthem developed. Five months before presentation he was given small doses of the gold compound without any effect on the lesions, and improvement did not result from intracutaneous injections of the preparation. Fifteen injections of bismocymol were then given at weekly intervals, and the patient showed marked improvement. Originally the lesions were in the form of coin-sized, reddish, well defined infiltrated areas with definite hyperkeratosis.

DISCUSSION

DR. J. V. KLAUDER: I first saw this patient eighteen months ago and gave him an initial injection of 25 mg. of gold and sodium thiosulphate, which was repeated in a week. An acute reaction developed, which I thought was acute lupus erythematosus rather than a toxicologic reaction to the gold preparation. The lesions appear to me to be the same as they were when I first saw the patient.

DR. S. S. GREENBAUM: At present there is no thickening. Eighteen months ago he may have been in the same state that he is in now, but not when I first saw him, as his photograph will show. This is a clearcut case of improvement of lupus erythematous in a patient under treatment with bismocymol.

DR. J. M. SCHILDKRAUT: Lupus erythematosus of the lids seems to be most recalcitrant to treatment.

DR. JOHN H. STOKES: I should suggest treatment with a little sulphur. Every once in a while the seborrheic factor in the lesions yields to this chemical, which gets rid of the last lingering desquamation.

DR. F. D. WEIDMAN: Speaking of these toxic reactions to gold, are there ever nervous symptoms of the order of neuritis? For instance, gold is employed for the demonstration of nervous tissue histologically. One wonders whether the "affinity" of gold and nerve tissue, indicated in the pathologic technical procedure in which the tissues are fixed, signifies some peculiar element in the chemical composition of the nerves that also obtains under clinical conditions. I should like to ask the members of the society whether they have seen neuritic effects following the use of gold.

DR. J. V. KLAUDER: In answer to Dr. Weidman's question, I have never observed toxicologic reactions to gold compounds involving the nervous system. Regarding untoward reactions to such preparations, it is interesting to note that in Secher's recently published book, "Traitement de la tuberculosis par la sanocrysine," such reactions are interpreted as significant of the presence of tuberculosis of the organ or part involved in the reaction. This is spoken of as "focal reactions." For example, a phlyctenular-like conjunctivitis is at times observed as an untoward reaction. This, according to Secher, is in line with the hypothesis that phlyctenular conjunctivitis is of tuberculous origin. A phlyctenular conjunctivitis following the injection of a gold preparation is observed only in tuberculous animals.

DR. JAY F. SCHAMBERG: I think that nothing positive is known concerning the pathogeny of eruptions due to gold compounds. You will recall that in Mollgard's book, his clinical associates made great claims for what they called sanocrysin, which is nothing more than gold and sodium thiosulphate, and they gave enormous doses of this drug, such as 1 Gm. intravenously; a wide variety of cutaneous eruptions and also conditions of the blood developed, and they believed that the eruptions were due to the setting free of tuberculin. I have never been able to subscribe to that doctrine, even though they persist in it. Today one of the clinical physicians said that the best results are secured with large doses. I think that the eruptions that followed were distinctly toxic eruptions due to the gold compound. Some of these eruptions are like acute dermatitis following the administration of arsenic, but one may almost produce nephritis from the use of gold preparations. In one of my patients there was a uterine hemorrhage after even a very small dose of the gold compound, and this led to the warning against the treatment of pregnant women with such drugs.

There is a tremendous variation in different people. One patient tolerated one hundred and fifty injections of 100 mg. of gold and sodium thiosulphate; on the other hand, I have seen an eruption develop after a much smaller single dose. In some cases the eruption somewhat resembled a spread of the lupus, although I think this is a resemblance and not an identity of process.

DR. J. M. SCHILDKRAUT: I have seen two cases that resembled arsphenamine dermatitis. In one alopecia of the eyebrows, scalp and eyelashes developed.

EFFECT OF A DIET LOW IN SALT IN CASES OF TUBERCULOSIS OF THE SKIN.
DR. J. DÖRFFEL, the University of Königsberg.

Since June, 1929, all patients with cutaneous tuberculosis in the University of Königsberg have been treated with the Hermannsdorfer modification of the

Gerson low-salt diet. This diet is characterized in the main by a high value for protein and for fat, but a relatively low carbohydrate content. On an average, 3,000 calories are given daily, in the form of 90 Gm. of protein, 160 Gm. of fat and 220 Gm. of carbohydrate.

As we had received this mode of treatment with great skepticism, the results we saw in all of the patients so treated greatly surprised us. We have had essentially the same favorable results as those previously described by Jesionek-Bommer.

In judging the results we were not content with macroscopic observations and evaluations of the process of healing, but we also observed the changes in the skin by histologic and cultural studies.

In order to study the histologic changes during the dietetic treatment, we have taken sections for biopsy in each case; the first is taken before treatment is begun; the second, fourteen days after the commencement of treatment, and the subsequent sections, at regular monthly intervals. We were able to do this because the patients were in the hospital throughout the entire course of treatment. I emphasize the fact that we always took great pains to excise for study the part of the lesion or lesions that was most diseased, so that improvement could not be attributed falsely to the injudicious choice of tissue. In this way, we were able to make parallel studies of the clinical and histologic changes, month by month, under the influence of the diet low in salt.

Further, at greater intervals, we have cultured a part of the excised tissue on an egg (yolk) medium, according to the method of Lubenan. Cultural studies were made in fourteen cases.

Altogether, fifty-one patients with cutaneous tuberculosis were treated with the diet low in salt. Of these, seventeen had no tuberculous lesions when dismissed. In twelve, the response was favorable, but the patients disappeared from observation before enough time had been allowed for complete healing. Sixteen patients came under treatment within two months before the preparation of this paper, but even in this time the condition of all was improved. In only six of the entire series was there neither improvement nor healing under this treatment. One of these six patients, a woman, 40 years of age, after initial improvement, suffered a relapse, both clinically and histologically.

All of the patients were reexamined every three months following dismissal. A few had recurrences of the lesions, which, however, were not to be compared in severity to the recurrences that were formerly encountered following the standard types of treatment previously used. On the other hand, the patients who had disappeared from observation in the course of treatment and who returned later to continue with the treatment and those still under treatment later showed improvement and healing.

In the great majority of our cases there were favorable results. After from twelve to fourteen days of diet, there appeared an inflammatory reaction of the cutaneous lesions, with an areola, comparable to that seen following injections of tuberculin. Then the lesions gradually became dry, and the inflammatory infiltrations began to resolve. Finally, the apple jelly nodules disappeared, and, in the course of months, only small depressed scars remained. In favorable cases the entire lupus lesion healed with surprisingly good cosmetic results. The scars were smooth and delicate.

Histologic studies revealed changes characteristic of healing. After approximately fourteen days of diet, all edema had disappeared and histologic studies were facilitated, so that one was able to see clearly the quantitative and the qualitative changes which the lupus infiltrate had undergone. Later the vessels, especially the elements of the vascular walls, and the young, richly vascularized connective tissue spread out into the infiltrate, surrounding it and dividing it into small nests. The infiltrate decreased before the attack of the new elements of the vascular walls and of fibroblasts, which arise chiefly from the elements of the vascular walls.

Bacteriologic studies revealed that bacilli of tuberculosis were apparently decreased in virulence, because in fourteen cases in which cultures were made several times, it was found that the cultures finally became negative in every instance. Approximately half of them had been positive before the diet was begun. Probably this decrease in virulence is due to stimulation of activity of the reticulo-endothelial system by the diet.

In order to determine the influence of the diet on the entire organism, we have made studies of the blood that included the sedimentation test, the guttadiophot reaction and the complement-fixation test with a special immune body antigen. Such studies were made once before the diet was begun, and then every four weeks for some months. These studies were controlled by a series of the same tests made on healthy patients over a similar period.

The sedimentation time was accelerated. The complement-fixation test was useless. The blood picture fluctuated to such a degree as to be a characteristic effect of this form of treatment.

From clinical observations and investigations we were able to conclude that visible improvement and the final clinical healing were paralleled exactly by the histologic changes, and that the bacteriologic findings were also in accord. The general effect on the entire organism was shown by the blood picture and by the guttadiaphot and sedimentation reactions.

The disadvantage of the dietetic treatment was that in some cases fifteen months were required to produce healing. We attempted to reduce this by the addition of local treatment. The combined treatment consisted of the administration of the diet low in salt and a 5 per cent solution of pyrogallol given locally, applied for five days at a time, at varying intervals, depending on the condition of the lesions. The local use of from 30 to 50 per cent resorcin for from five to six days at intervals gave good results in dry, scaly lesions. In other cases mild treatment with ultraviolet rays, treatment with the Kromayer lamp and caustics applied to the individual lesions produced good results. More recently we have treated a number of our patients by alternating the diet low in salt at long intervals, with short periods of a milk and vegetable diet, for the shock effect, with good results.

DETROIT DERMATOLOGICAL SOCIETY

H. J. PARKHURST, M.D., *Reporter*

Meeting at the University Hospital, Ann Arbor, March 15, 1932

CLAUD W. BEHN, M.D., *Presiding*

LYMPHOBLASTOMA. Presented by DR. UDO J. WILE and DR. GEORGE H. BELOTE.

E. N., aged 50, a mechanic, had been presented about three years previous to this meeting at the February meeting of the Chicago Dermatological Society in Ann Arbor, as having one of the lymphoblastomas, clinically an early infiltrative stage of granuloma fungoides. The eruption had been present for seven years. Universal exfoliative dermatitis had developed, with the typical underlying boiled-lobster color. Sections of the skin showed advanced lymphoblastoma, as did also sections of superficial lymph nodes.

LYMPHOBLASTOMA. Presented by DR. UDO J. WILE and DR. GEORGE H. BELOTE.

F. W., aged 41, a fireman, had been presented at the February meeting of the Chicago Dermatological Society at Ann Arbor about three years preceding this presentation, as having one of the lymphoblastomas. At that time there was a mild exfoliative dermatitis with some atrophy and telangiectasia. This picture

had become more pronounced, although the patient was in fairly good physical condition and continued his work as fireman of a locomotive. Sections of the skin showed lymphoblastomas.

LYMPHOBLASTOMA (HODGKIN'S TYPE, IN SKIN AND LYMPH NODES). Presented by DR. UDO J. WILE and DR. GEORGE H. BELOTE.

In M. P., a man, aged 44, a factory worker, a generalized pruritic eruption had developed twenty months preceding presentation. He had first come under observation in July, 1931, with a patchy, generalized, scaly erythroderma, associated with hyperpigmentation and superimposed lichenoid and annular papules in the patches. There was epitrochlear, axillary and inguinal adenopathy, the latter varying from the size of an olive to that of an egg. The spleen and liver were not palpable. On Oct. 27, 1931, a biopsy showed Hodgkin's type of lymphoblastoma in both skin and lymph nodes, and the suggestion was made that cases such as this presented conclusive proof of the generic unity of Hodgkin's disease with the other lymphoblastomas. The hemoglobin percentage was 96; the erythrocytes numbered 4,490,000; the leukocytes, 12,300, of which 43 per cent were neutrophils, 28 per cent eosinophils, 3 per cent large lymphocytes, 18 per cent small lymphocytes and 8 per cent monocytes. The platelets were increased in number.

DISCUSSION

DR. UDO J. WILE: You have seen these cases before. They illustrate the advisability of labeling them simply "lymphoblastoma" rather than "granuloma fungoides" or "leukemia." Case 2 illustrates this. The patient in case 3 seemed to be the first one with lymphatic leukemia who ever got well, but he has since had a recurrence and has again recovered. The fourth case was found by biopsy to be typical Hodgkin's disease; the patient is progressing rapidly. Hodgkin's disease seems to be the condition with the cleanest type.

DR. HARTHER L. KEIM: Microscopically the three types looked alike, except for differences in the cell types. Poikiloderma vascularis atrophicans seems to be the cutaneous expression of an underlying neoplasm.

DR. GEORGE H. BELOTE: These cases certainly show changes from time to time that clinically resemble poikiloderma vascularis atrophicans.

DR. ROLLIN H. STEVENS: An area over the sacrum resembled radiodermatitis.

DR. ROBERT C. JAMIESON: I have never seen a nicer collection of lymphoblastomas, and now I wonder how we can diagnose some of these cases in their early stages. Even when they resemble a perfectly innocent condition, it is necessary to bear in mind that they may later become lymphoblastomas.

DR. GEORGE H. BELOTE: In case 3 the improvement was probably due to treatment with the roentgen rays.

BLASTOMYCOSIS. Presented by DR. UDO J. WILE and DR. GEORGE H. BELOTE.

W. R., aged 56, a farmer, presented an eruption of a year's duration. A lesion like a boil had appeared on the forearm, had failed to heal and had gradually spread until it involved one third of the forearm. It was a rather crescentic granuloma with a verrucous border. The biopsy specimen showed typical blastomycosis, and the lesion had healed considerably under treatment with the roentgen rays and iodides.

DISCUSSION

DR. GEORGE H. BELOTE: This case is characteristic clinically and histologically, but blastomyces have been hard to find in this area.

DR. LOREN W. SHAFFER: I have always wanted to try ionization with compound solution of iodine in a case as superficial as this one. It should respond promptly.

DEPIGMENTARY SYPHILID AND ALOPECIA. Presented by DR. UDO J. WILE and DR. GEORGE H. BELOTE.

E. B., aged 19, and R. P., aged 17, were presented because of the unusual extent of the involvement. The condition was not confined to the neck, as usually described, but appeared also on the trunk, an observation that had been increasingly common at the Ann Arbor clinic in the past few years.

DISCUSSION

DR. UDO J. WILE: This condition has been observed mostly in young women, often in association with cerebrospinal syphilis. In some cases it may extend down to the lower part of the back.

PSORIASIS VULGARIS BEGINNING AT THE AGE OF 3 YEARS AND 8 MONTHS. Presented by DR. LOREN W. SHAFFER.

M. C., a baby girl, aged 4 years and 2 months, presented disseminated nummular patches of psoriasis on the scalp, the lower part of the back, the arms and the legs, with typical micaceous scales before treatment had been started. At the onset, in June, 1931, there had been a tendency to predilection for the sunburn areas on the chest and back, but these lesions had largely involuted under therapy with ultraviolet rays. There was no familial history of psoriasis.

DISCUSSION

DR. HENRY S. BARTHOLOMEW: A few months ago I saw psoriasis in a nursing baby, aged 10 months.

A CASE FOR DIAGNOSIS. Presented by DR. HARTHER L. KEIM.

L. M., a woman, aged 23, with mild diabetes, stated that the first lesion had appeared as a small nodule over the left external malleolus, gradually extending to its present size. One year before presentation the lesion on the inner surface of the left leg had made its appearance. On the left internal malleolus there was a palm-sized, dusky, erythematous patch, only slightly infiltrated, the upper half of which presented marked telangiectasia. Approaching the border were numerous glass pinhead-sized, atrophic, brownish-yellow papules. The border was sharply defined and contained several advancing nodules. There was no ulceration. On the inner surface of the left leg there was a dime-sized similar nodule.

DISCUSSION

DR. UDO J. WILE: At first I felt that the condition was an infectious granuloma, but on closer examination I considered it probably morphea.

DR. HOWARD J. PARKHURST: I agree with Dr. Wile.

DR. GEORGE H. BELOTE: The histologic picture seems to bear out a diagnosis of morphea.

DR. LOREN W. SHAFFER: I was more interested in the granulomatous nature of the case. There was a history of a crusted destructive process, which has left punctate scars about the border, favoring a tuberculous etiology.

DR. JOHN A. HOOKEY: I feel that the condition is a granuloma.

SEBORRHEIC DERMATITIS AND PITYRIASIS ROSEA. Presented by DR. UDO J. WILE and DR. GEORGE H. BELOTE.

F. S., a schoolgirl, aged 13, had had no previous dermatoses. The eruption was of two weeks' duration. There was a distinctly papulosquamous eruption involving the scalp, face, trunk, arms, axillae and groins. The legs, palms and soles were unaffected. About the scalp and face the eruption was confluent, and

the scale was yellow and greasy. On the arms and trunks the eruption was more distinctly papular and lacked the marginal confluence shown in the other areas. The Kahn reaction of the blood was negative.

DISCUSSION

DR. GEORGE H. BELOTE: This case has caused much discussion here. I feel that there is seborrheic dermatitis with an exanthem superimposed.

DR. LOREN W. SHAFFER: I have seen similar cases. At first the lesions of pityriasis rosea predominate, and later the face and other areas become involved. They usually follow the course of pityriasis rosea and subside, leaving no seborrheic dermatitis. It may be a toxic erythema.

DR. UDO J. WILE: I agree with Dr. Shaffer and consider the condition pityriasis rosea, so far as all except the lesions on the scalp are concerned.

DR. ROBERT C. JAMIESON: I can add one more case to Dr. Shaffer's group: one in which there were many fine papular lesions distributed from the knees to the face, and a few on the face. The condition was probably pityriasis rosea primarily, plus a toxic erythema of papular type.

SEBORRHEIC DERMATITIS OR PSORIASIS (?). Presented by DR. UDO J. WILE and DR. GEORGE H. BELOTE.

D. K., a woman, aged 23, presented an eruption of about three years' duration confined to the scalp and ears. The eruption was papulosquamous, the scale in places resembling psoriasis. In the region of the ears it was eczematoid. This type of eruption is common in women, and the case was presented for discussion and for suggestions as to the most effective therapy.

DISCUSSION

DR. HOWARD J. PARKHURST: I consider it psoriasis, because the scales are dry and the patches sharply outlined. In treating the scalp, one-eighth unit doses of roentgen rays weekly, over the points described by Kienboeck and Adamson, together with an ointment containing 2 per cent of ammoniated mercury and salicylic acid, have proved effective.

DR. LOREN W. SHAFFER: It is probably psoriasis. I have had similar therapeutic results, but the condition recurs.

DR. EMMETT C. TROXELL: Involvement such as this, about the ears, often seems to start with irritation from spectacles.

DR. UDO J. WILE: I felt that this might be lupus erythematosus, which I have seen beginning in this manner, and would suggest it as a third possibility.

SCROFULODERMA. Presented by DR. UDO J. WILE and DR. GEORGE H. BELOTE.

A. C., a girl, aged 19, had had a nodule under the skin of the wrist, supposedly a synovial ganglion, for twelve years. It had been excised two months before presentation, and the pathologist had considered it tuberculous tenosynovitis. Since that time the incision had refused to heal, and sinuses had formed in it. Roentgenograms of the chest were negative, and no pelvic or abdominal tuberculosis had been found.

LICHENOID TUBERCULOSIS. Presented by DR. UDO J. WILE and DR. GEORGE H. BELOTE.

F. W., a man, aged 52, a farmer, had had tuberculous lymph nodes in the neck and axilla for about two years, as confirmed by pathologic study. There was an eruption of about four months' duration resembling lichen planus except in its

distribution. Roentgenograms showed marked accentuation of the hilar shadows. Cutaneous biopsy showed tuberculosis. The Kahn reaction of the blood was negative.

DISCUSSION

DR. GEORGE H. BELOTE: In the girl, scrofuloderma followed the incision. In the man, the eruption, resembling lichen planus, was probably lichenoid tuberculosis.

DR. HARTHER L. KEIM: In the girl's case the possibility of malingering must be considered.

DR. UDO J. WILE: The man's case does not show the picture of lichen scrofulosorum. It is the analog of the lichenoid syphilid, and is lichenoid tuberculosis. I should not expect it to clear up rapidly. It seems to be due to hematogenous infection from miliary tuberculosis elsewhere in the body. During the summer it will probably subside and leave pigmentation and a residual eruption, only to recur later.

A CASE FOR DIAGNOSIS. Presented by DR. UDO J. WILE and DR. GEORGE H. BELOTE.

H. B., a man, aged 26, an inspector, had first noticed an abscess on the dorsum of the left thigh two years previous to presentation. This abscess was incised and drained, and it healed after considerable time. About one year later a smaller lesion appeared on the sole. This lesion was incised and subsequently healed. Since that time other similar lesions had appeared on the forearm and abdomen, and at the time of presentation they were walnut-sized, fluctuant nodules and draining sinuses. Physical and roentgenographic examinations showed evidence of pulmonary tuberculosis. The biopsy observations were not characteristic of tuberculosis. The Kahn reaction of the blood was negative.

DISCUSSION

DR. LOREN W. SHAFFER: The first impression gained from the history would be tuberculosis, but lesions so widely disseminated would make one suspect some mycotic infection. I would suggest that cultures and inoculations of guinea-pigs be made to exclude the possibility of tuberculosis.

DR. GEORGE H. BELOTE: So far, after three or four days, we have obtained only a growth of staphylococci on cultures.

DR. ROBERT C. JAMIESON: These lesions are probably not tuberculous gummas. I agree with Dr. Shaffer that the possibility of a fungus etiology must be seriously considered.

DR. ROLLIN H. STEVENS: This case resembles one that we have been observing in Detroit. Granuloma coccidioides is also a possibility. At the Portland meeting of the American Medical Association roentgenographic plates of a number of cases were shown, and they resembled pulmonary tuberculosis. In the present case the roentgenograms of the chest may show evidence of granuloma coccidioides or lymphoblastoma, but probably not of tuberculosis.

DR. HARTHER L. KEIM: The condition is probably an unusual form of lymphosarcoma, as the histologic picture would suggest.

DR. UDO J. WILE: Tuberculosis can be eliminated clinically and histologically. There were a number of eosinophilic cells of embryonic type, like plasma cells. We found no Actinomyces in the pus. Coccidioidal granuloma is relatively easy to diagnosis microscopically, and the organism is easier to find than Blastomyces. The condition may be lymphosarcoma.

ACNE CONGLOBATA. Presented by DR. UDO J. WILE and DR. GEORGE H. BELOTE.

R. G., a man, aged 42, a laborer, presented no active lesions. The eruption had been recurrent over a period of fifteen years. When originally seen he had

presented numerous destructive granulomatous-appearing lesions, some of which showed sinus formation, while others had rupioid crusts. A mistaken diagnosis of rupial syphilid had been made. There were extensive scarring and marked formation of comedones, characteristic of acne conglobata. Photographs of the patient with active lesions were shown for purposes of comparison.

DISCUSSION

DR. GEORGE H. BELOTE: This case was presented particularly to show the extensive scarring and to serve as a reminder that it might be confused with rupial syphilid.

PITTSBURGH DERMATOLOGICAL SOCIETY

CLAUDE B. NORRIS, M.D., *Secretary*

Regular Meeting, March 17, 1932

JAMES H. FISCUS, M.D., *President*

PUSTULAR PSORIASIS? UNUSUAL EPIDERMOPHYTOSIS WITH DERMATOPHYTIDS? Presented by DR. L. HOLLANDER and DR. A. FISHER.

L. C., a man, aged 22, presented a scattered, bilateral eruption that affected the extremities and buttocks. The eruption was composed of rounded, irregular-sized, discoid patches, which were covered with a closely adherent encrustation. A pyogenic element in the form of small pustules could be discerned. Little infiltration was present. The areas in which the overlying scales and encrustations had been removed were bright red, and the borders were sharply defined from the unaffected surface of the skin.

On the right thumb there was an involvement of the tip and the nail. The nail was thickened, and transverse striations over a longitudinal furrow were present. The finger-tip showed scaling. The left thumb-nail showed a similar process, but it was not nearly so far advanced as that on the right thumb. The surrounding skin was not affected, but the itching was intense.

The condition was of three years' duration. It began with the advent of cold weather, disappeared the following summer, and reappeared the next winter; it disappeared the second summer, with the exception of two patches on the groin, and recurred the third winter. Natural sun rays seemed to have a beneficial effect, but ultraviolet rays did not produce the same result.

Laboratory examination gave essentially negative results, with the exception of a faint trace of albumin in the urine and a fairly high eosinophil count of 5 on several occasions. Cultural examinations gave negative results. An injection of 0.1 cc. of a 1 : 10 solution of trichophytin produced a severe and lasting reaction which could be noted on the right arm.

DISCUSSION

DR. W. H. GUY: I saw the patient with a similar attack in which therapy was ineffectual. I considered the condition a patchy dermatitis due to sensitization, and suggested nonspecific protein therapy. As to the Trichophyton reaction, I thought that infiltration of the skin with a plain salt solution or a similar substance was indicated to determine whether or not minor trauma might produce a reaction similar to that induced by trichophytin.

DR. E. GILLESPIE: This patient presented a symmetrical eruption, which she said appears and disappears. The lesions on the legs had an annular configuration which resembled erythema multiforme.

INFECTIOUS ECZEMATOID DERMATITIS, NONSUPPURATIVE. Presented by DR. L. HOLLANDER and DR. J. HECHT.

Mrs. M. H., aged 74, presented an inflammatory eruption, which affected the arms, forearms, pendulous portion of the breasts, lower portion of the abdomen and the legs. The eruption was bluish red, showing slight atrophy and yellowish nodules throughout. The condition was itchy.

In addition to the dermatologic condition, clinical examination revealed hypertensive cardiorenalvascular disease, extraventricular systolic arrhythmia and chronic myocarditis.

A histologic section was obtained, and its description was as follows: Papillary fibromas of the skin of the arm and acute and chronic inflammation of papillomas. The growth was highly vascular. It showed no evidence of tuberculosis.

DISCUSSION

DR. H. T. PHILLIPS: I believed that this case was one belonging in the erythema multiforme group. The patient had lesions on the soft palate; they faded out almost entirely, and then reappeared quickly, within a half an hour. The anular outline and the urticarial character of the lesions seemed to bear out the diagnosis of a chronic type of erythema multiforme.

DR. F. JACOB: The case was not acute or eczematoid. The history of preceding intestinal crises suggested, as Dr. Phillips said, erythema multiforme.

DR. W. H. GUY: The character of the rather edematous inflammatory linear lesions with atrophy secondarily suggested a diagnosis of acrodermatitis chronica atrophicans. I considered the nodules a complication.

DR. B. A. GOLDMANN: I agreed with Dr. Guy that this was the infiltrative stage of acrodermatitis atrophicans.

DR. G. BUSMAN: The patient described her condition as definitely related to the gastro-intestinal tract. Certain foods aggravated the condition. I considered it an allergic condition with urticarial and erythematous types of lesions.

LICHEN SCROFULOSORUM. Presented by DR. LESTER HOLLANDER.

C. T., a colored man, aged 23, presented a papular eruption which affected the trunk principally. The lesions appeared somewhat acuminate and grouped. The patient was referred from the Tuberculosis League Hospital. Clinical investigation gave negative results except for pulmonary tuberculosis.

DR. G. BUSMAN: A biopsy should be performed. The condition may be trichophytid, leukemid, etc. The diagnosis is possibly correct.

LEPROSY. Presented by DR. H. T. PHILLIPS and DR. W. J. MORGINSON.

V. C., a man, aged 23, Italian, exhibited typical leprosy of the nodular type. The first objective symptom noticed was "swelling" of the hands, accompanied by a sensation of coldness, during the winter of 1930 to 1931. The hands appeared normal during the following summer months. In July, 1931, the first nodule was seen on the forehead above the left eye. Subsequently, many variously sized nodules rapidly appeared over the face, neck and extremities. A few retrogressed, leaving brownish pigmentary areas. There was a concomitant mild, ill defined malaise.

When presented, there were numerous, cutaneous and subcutaneous, firm, rounded or oval, glossy, waxlike nodules, from 0.5 to 2 cm. in diameter, over the forehead, cheeks, nasal vestibule, lobes of the ears and extremities. There was no marked thickening or infiltration of the involved areas of the skin, although there was the appearance of leontiasis. The hands were symmetrically swollen; the skin had a mottled blue appearance and was clammy. No areas of hyperesthesia or anesthesia were noticed. There was a mild nasal catarrh. The ulnar nerves were enlarged and tender. The Wassermann test was negative.

Histologic sections were positive pathologically and bacteriologically for leprosy.

The patient was born in Utica, New York, but resided in Naples and Palermo, Italy, for eleven years. Since 1918, he has lived in Steubenville, Ohio. His father and mother died several years ago of "pneumonia." The family history was negative for leprosy.

DISSEMINATED MILIARY LUPOID? LUPUS ERYTHEMATOSUS? Presented by DR. L. HOLLANDER and DR. A. FISHER.

R. F., aged 32 years, presented many erythematous, scaly, flat lesions, and some raised lesions, especially on the nose, cheeks, ears and the chin, and disseminated lesions on other parts of the face. There was one lesion on the scalp. On pressure some of the lesions appeared to show a yellowish discoloration. There were several grayish papules on the buccal mucous membrane. Laboratory examination of the blood revealed: hemoglobin, 72 mg.; white cells, 9,600; red cells, 4,370,000, and color index, 0.82; the differential count showed: polymorphonuclears, 59.66; lymphocytes, 34.33; monocytes, 4.66, and eosinophils, 1.33 per hundred cubic centimeters. Wassermann and Kahn tests of the blood were negative.

DISCUSSION

DR. G. BUSMAN: I favor the diagnosis of lupus erythematosus, and suggest that a biopsy be performed.

LICHEN PLANUS—HYPERTROPHIC AND BULLOUS TYPE. Presented by DR. GEORGE J. BUSMAN.

Mrs. H. O. B., a widow, aged 46, presented a chronic verrucous condition of both legs, more pronounced over the anterior surface from the knee to the ankle. There were large plaquelike areas, consisting of hypertrophic papules, flat, shiny, bluish papules, large lichenified plaques and several ruptured and unruptured bullae with denuded areas. Over the elbows were numerous conical and flat papules that were not definitely lichenoid. Over the lumbar and sacral region was a large area consisting of various-sized flat, shiny, bluish papules typical of lichen planus. There were a few lesions in the buccal surface and a spider-weblike involvement of the mucous surface of the lower lip.

On first examination the condition was suggestive of chronic dermatitis herpetiformis. The condition was of four years' duration, being chiefly on the arms and legs. The patient had received nine months of roentgen treatment, which was given as often as from two to three times weekly. Internally, she had received mercuric protoiodide and arsenic in the form of pills. The mercury caused a marked dysenteric reaction. The patient was nervous and had experienced considerable mental worry and grief.

CLEVELAND DERMATOLOGICAL SOCIETY

J. R. DRIVER, M.D., *Reporter*

Regular Meeting, March 24, 1932

H. J. PARKHURST, M.D., *Presiding*

LYMPHOGRANULOMA INGUINALE. Presented by DR. H. F. DEWOLF.

W. T., a Negro man, aged 30, from the service of Dr. H. N. Cole and Dr. J. R. Driver, at Cleveland City Hospital, had been a patient in the surgical service of Cleveland City Hospital in 1928 for treatment of varicose ulcers of the legs. For about one year prior to his present admission he had been under treatment

at Charity Hospital for similar ulcerations of the legs and had received antisyphilitic treatment. His present illness dated back about two months, at which time he noticed a penile lesion; shortly after this an inguinal adenitis developed bilaterally, which had increased in size to the present time.

There was a pea-sized granulomatous lesion on the prepuce, producing moderate phimosis. Both groins were involved, with an extensive, hard, painless, inflammatory enlargement of the lymph glands; on the right side, the iliac glands were also involved. Several small sinuses were present on the surface of the skin over these glands.

The Wassermann and Kline tests of the blood were negative. Smears for gonococci, the bacillus of Ducrey and for Donovan bodies were all negative. The dark-field examination for Spirochaeta pallida was negative. The dark-field examination for Vincent's organisms was positive. The red cells numbered 3,900,000; the white cells, 5,000. The differential count was normal; the Frei test positive.

Biopsy of the penile lesion showed the skin to be covered by a thin, papilliform layer of epithelium. Finger-like projections of epithelial cells extended into the corium from the epidermis. In places the epithelium was completely destroyed to form small points of ulceration. The corium was fairly densely packed with round cells, consisting chiefly of large and small lymphocytes. There were strands of fibroblasts distributed throughout. At one point in the corium there was a circumscribed area, the central portion of which consisted of necrotic material, cellular débris and numerous polymorphonuclear cells. The surrounding area consisted of endothelial cells, a few lymphocytes and an occasional foreign body giant cell. There were two small areas deep in the corium showing some necrosis and endothelial hyperplasia.

LYMPHOGRANULOMA INGUINALE (ANORECTAL SYNDROME). Presented by DR. H. F. DEWOLF.

W. P., white, a man, aged 31, from the service of Dr. H. N. Cole and Dr. J. R. Driver, at Cleveland City Hospital, on July, 1919, was criminally assaulted while a prisoner in a guardhouse. Five weeks later "hemorrhoids" developed which were immediately excised. The surgical wound did not heal, and a fistula, stricture and numerous condylomas developed. He was again operated on, and again the surgical wound failed to heal. He was given antisyphilitic treatment, although he says his Wassermann reaction was negative. Treatment was continued off and on for six and one-half years. During this time he had four more operations on the rectum, and a diagnosis of tuberculosis was made. Masses around the anus were removed several times, and in 1926 the rectal sphincter was removed because of the large amount of pus that accumulated above it. He had had epileptiform seizures at times ever since 1919.

The results of the physical examination were essentially negative except for the anal region and the rectum. The anal region showed evidence of numerous surgical procedures, and there were several flat masses present. The external sphincter was evidently destroyed, as the anal orifice was gaping. There was a tight stricture of the rectum present about 2 inches (5 cm.), above the anal orifice.

The laboratory findings were: The Wassermann and Kline tests of the blood were weakly positive. Examination of the spinal fluid showed the following: Wassermann test, negative; 4 cells; Pandy test four plus, and gum mastic curve, 5432100000. The red cells numbered 4,700,000; the white cells, 7,800, and the hemoglobin was 90 per cent. The Frei test was strongly positive.

DISCUSSION ON LYMPHOGRANULOMA INGUINALE

DR. H. F. DEWOLF: There is not much to be said about these cases, except that they are proved cases of lymphogranuloma inguinale. The colored man had marked involvement of both groins. The white man had an unusual localization of the disease. He has been treated for years for supposed anorectal stricture;

later for tuberculosis. This case presents a good example of the value of the Frei test in all cases of this type; because the Frei test was positive, this condition has probably always been lymphogranuloma inguinale. We have made so many of these tests that we believe the positive result is just as convincing as a positive Wassermann test in syphilis. Over one thousand of these tests have been made in both the medical and the surgical services of this hospital, and they are positive only for patients who have the disease with the characteristic involvement of the lymph glands.

SYCOSIS VULGARIS IN A WOMAN WITH HYPERTRICHOSIS. Presented by DR. SIDNEY LITTMAN.

Miss E., aged 26, has had hypertrichosis of the neck, which roughly follows the outline of the mandible. Following the use of a depilatory, the hair follicles became infected and remained persistently involved for several months. Examination showed pustular dermatitis and folliculitis of chronic type.

SYCOSIS VULGARIS TREATED BY INFRA RED RADIATION AND NASAL HYGIENE. Presented by DR. SIDNEY LITTMAN.

F. S., a white man, aged 20, had had sycosis vulgaris of the bearded region of the face, with involvement of the eyebrows and temporal region of the scalp, for three and one-half years. During the past year epilation had been performed twice; each time the sycosis vulgaris recurred. The patient was presented to show the results of another therapeutic measure; viz., the use of nasal hygiene plus infra-red radiation.

DISCUSSION ON SYCOSIS VULGARIS

DR. H. N. COLE: I do not know that I want to accept the diagnosis of sycosis vulgaris in the case of the woman. I grant that she has dermatitis of the skin around the jaws and down over the neck, but I have seen a good many instances of dermatitis in women who have used preparations for hypertrichosis. I looked closely but could not find any typical pustules with a central hair. I think it is a chronic dermatitis. I wonder if the patient has used something we do not know about? Another treatment for hypertrichosis advocated by some dermatologists, but which I have never tried, consists of the use of pumice stone over a long period of time, week in and week out, rubbing the pumice stone over the areas; in time there seems to be atrophy of the hairs.

DR. SIDNEY LITTMAN: As far as I can determine, no local substance has been used by this patient for over three months. I first saw her three months before presentation, and at that time there seemed to be the peculiar characteristics of a subacute dermatitis, but I still feel that the follicular element is present. I ventured this diagnosis with a bit of trepidation. I presented this case as one of probable sycosis vulgaris, a disease rare in women.

I think the man has been treated with a great deal of benefit. Epilation has been performed twice, but without much success, so I endeavored to pursue some other course. A nose and throat specialist suggested painting the nasal mucosa with acriflavine at weekly intervals. The patient was also told to expose himself to infra-red radiation. I showed him merely to demonstrate how well he has responded to this simple treatment.

GIANT CHANCRE OF THE CHIN. Presented by DR. H. F. DEWOLF.

C. H., a white man, aged 39, from the service of Dr. H. N. Cole and Dr. J. R. Driver, at Cleveland City Hospital, was struck on the chin, Dec. 31, 1931, during a hold-up. The wound failed to heal. At the site of the wound a proliferative lesion developed. Soon the glands under the chin and jaw began to enlarge. Later an eruption appeared all over his body, and his left eye became markedly infected and painful. On admittance there was a crusted, indurated

lesion on the right side of the chin, slightly smaller than a silver dollar. Its center was depressed. There were discrete, firm and painless submental and submaxillary adenitis, intense iritis of the left eye, mucous patches of the throat and a generalized maculopapular eruption. In addition there was a destructive lesion of the right ala nasi, which had been present for five or six years, the nature of which has not yet been determined. At the time of presentation the eruption had practically disappeared, the iritis was greatly improved, and the regional adenitis much less evident. The chancre of the chin had diminished in size somewhat and was healing.

Laboratory findings were as follows: The dark-field biopsy from the chancre was positive; the Wassermann and Kline tests of the blood were four plus; and the spinal fluid was negative.

Treatment consisted of four intravenous injections of either arsphenamine or neoarsphenamine to a total amount of 1.4 Gm., calculated as arsphenamine; three intramuscular injections of thiobismol, each of 0.2 Gm., and twenty-one rubs of a special stronger mercurial ointment, 15 Gm. rubs of a 20 per cent ointment.

DISCUSSION

DR. J. E. RAUSCHKOLB: The primary lesion looks somewhat like a condition we had three or four years ago which turned out to be anthrax. The purpura, the sharply defined lesion and the cervical adenopathy make a picture of anthrax quite possible. The other lesion on the nose is fully as suggestive. The patient had an injury to the nose, with considerable atrophy, lasting over a period of years. I thought it was rhinoscleroma.

DR. H. N. COLE: The only difficulty with this diagnosis is that the patient does not come from the region of the Black Sea, but from the United States. I believe all those cases originate in the country about the Black Sea.

DR. SIDNEY LITTMAN: The asymmetry of this patient's nose caught my attention with as much force as the lesion on the chin. I too, wondered if it were rhinoscleroma.

DR. H. F. DEWOLF: The history of this patient does not include his first contact with City Hospital. Because of the localization of the lesion, it was not recognized for some time after he was admitted to the tumor clinic. Attention seemed to be concentrated on the chin alone. Even today you can see the iritis of the left eye which has lasted over a month. In spite of the fact that he has had treatment for over four weeks, while the chancre is reduced, it is still of unusual size. When a patient presents a lesion of such unusual character, he should be stripped and examined carefully. If this had been done when the patient was first seen, the diagnosis would have been obvious. Because attention was concentrated on the chin alone, no diagnosis was made until a biopsy was made, and the pathologist reported chronic inflammation. We have been interested, too, in this destructive nasal condition, but when the patient was first seen the diagnosis of the lesion on the chin seemed the most important, and the lesion on the nose was not thought to be part of this condition, since it was of five or six years' duration and had no particular relationship to the syphilitic infection. We have not made examination to find out whether this is rhinoscleroma. Naturally, we thought of that possibility, but the patient has never been out of the United States.

DR. JOHN GAMMEL: I think of one possibility that has not been mentioned, that is the possibility of tuberculosis. We might be dealing with lupus of the nose.

ERUPTION PROBABLY DUE TO A DRUG. Presented by DR. EDWARD I. STEINBERG.

Mrs. R. W. W., a white woman, aged 27, gave an irrelevant previous history. The present trouble was of two years' duration. The patient says that the patch on the lower left quadrant of the abdomen has not changed in color, size or

appearance since its beginning and has never disappeared. There was present a brown, scaly, slightly itchy patch, the size of the palm. There was a history of the patient's having taken Phenolax and Alophen tablets now and then, but she had taken none for the last two months; these drugs caused no change in the eruption. The patient was asked to take Phenolax for two days prior to presentation, but no change was noted.

DISCUSSION

DR. EDWARD I. STEINBERG: There is a question in my mind as to whether this is an eruption due to a drug. There is a history of two years of taking drugs off and on and of then taking practically none for a period of six months. I thought this might be a beginning scleroderma or neurodermite. There has been no change in the past two days after the ingestion of phenolphthalein.

DR. E. W. NETHERTON: Dr. Steinberg mentioned two possibilities that he had considered; neurodermite and scleroderma, but on account of the pigmentation and the absence of erythema, I thought it was an eruption due to a drug, possibly phenobarbital, barbital or phenolphthalein.

ONYCHOMYCOSIS. Presented by DR. H. F. DEWOLF.

S. Z., a white woman, aged 36, from the service of Dr. H. N. Cole and Dr. J. R. Driver, Cleveland City Hospital, had had a disease of the nails of both hands and feet for approximately six months. The disease appeared first in the nail of the right thumb, later involving most of the finger-nails and part of the toe-nails. The patient had also had a chronic cough for the past fourteen months. A diagnosis of chronic bronchitis was made. A roentgenogram of the chest was negative for tuberculosis. The finger-nails were more severely involved than the toe-nails. The process seemed to begin either at the free edge or at the sides of the nails, producing a dark discoloration of the nail with loosening from the nail-bed. One of the nails of the right hand has been lost, as well as one of the toe-nails.

On laboratory examination direct examination of the clippings did not reveal fungi. Culture on Sabouraud's medium produced a growth that seemed to be a mixture of organisms. The Wassermann and Kline tests of the blood were negative. (Slides of cultures and the cultures themselves were shown.)

DISCUSSION

DR. J. EDGAR FISHER: These conditions of the nails are always interesting and hard to classify, but usually are of mycotic infection. From the therapeutic standpoint they are difficult to clear up. That has been my experience.

DR. JOHN GAMMEL: I think it is hard to say anything about the organism that has been isolated. It is probably Monilia, which may be found almost anywhere. At the present time it seemed to me that there was pus under the nails, and I believe that, if one would drill and get the pus from underneath, one would find that the condition is a mycotic infection. Possibly the usual treatment for ringworm would be helpful.

DR. H. J. PARKHURST: Possibly in differential diagnosis one would have to think of onycholysis, described by Dr. H. J. Templeton (*J. A. M. A.* **97:**1950 [Dec. 26] 1931).

DR. H. F. DEWOLF: I thought this was an extremely interesting disease of the nails. I took some material from the nails and examined it thoroughly for mycelia and spores. Cultures on Sabouraud's medium seemed contaminated, and thus far no one organism looks like a possible cause. This woman has chronic bronchitis, and I wonder whether her pulmonary condition has any relation to the disease of the nails?

FAVUS OF THE SCALP. Presented by DR. H. F. DEWOLF.

J. B., a white boy, aged 19, from the service of Dr. H. N. Cole and Dr. J. R. Driver, at Cleveland City Hospital, for the past nine years has had a disease of the scalp that has resisted all local treatment. He was born in Cleveland, Feb. 19, 1913. At the age of 9 years he was taken to Hungary for a visit; he remained there for about a year. The disease was first noted while he was in Hungary, and he was treated there without effect. Since January, 1925, he has been a patient off and on at the Lakeside Clinic.

Physical examination showed numerous scarred areas of the scalp, roughly circular in outline and varying in size, the largest area being about 3 inches (8 cm.) in diameter. Some of these scarred areas were perfectly smooth and free of hair; others still showed hairs, scales and crusting. There were no scutula to be seen. There was no mouse-nest odor. The scalp was the only part of the body involved.

Microscopic examination of hairs from the affected regions showed mycelia, spores and air bubbles. Hairs from noninvolved regions were normal in appearance. Cultures of involved hairs were positive on Sabouraud's medium for Achorion schoenleinii.

DISCUSSION

DR. JOHN GAMMEL: We have seen this patient during the five years previous to presentation, and also, as far back as five years ago thought of the possibility of mycotic infection. I looked up our cultures, and they were negative as far back as 1927. I do not think there is any question of the diagnosis. I think one should keep in mind the possibility of favus in all alopecias of the scalp with formation of scars.

DR. H. N. COLE: I saw this patient some time ago and made a diagnosis of folliculitis decalvans. At another time the condition looked much like pseudopelade of Brocq. Even today, I think one would have difficulty in making a diagnosis. About two months ago, after a long absence, the patient presented himself showing typical sulphur cups over his head. I agree with Dr. Gammel that one should examine all alopecias of the scalp with formation of scars for possible favus; even then one might not make the correct diagnosis.

DR. H. F. DEWOLF: My idea of this disease has changed a great deal. I first thought that one always sees these small sulphur cups on the scalp, but most of the cases we have seen do not show this symptom. I looked up favus in the literature, and in a good many cases it looks like impetigo. Some even look like pityriasis rosea of the scalp. One certainly has to be careful not to overlook favus. I should like to understand about the involvement of the hairs—whether the hairs all over the scalp are infected or just particular areas. In this patient all the hairs do not show the characteristic mycelia and hair bubbles.

A CASE FOR DIAGNOSIS. Presented by DR. H. F. DEWOLF.

E. T., a colored girl, aged 11, from the service of Dr. H. N. Cole and Dr. J. R. Driver, at Cleveland City Hospital, during the last four or five weeks had had a peculiar, linear eruption on the left side of the chest. It appeared first on the left lower extremity and later developed on the trunk and on the left upper extremity. There was mild itching at times. Otherwise the child had not complained and appeared to be in good health. She was a patient in City Hospital from Dec. 30, 1931, to Jan. 14, 1932, in the contagious division, suffering from measles and bronchopneumonia. The eruption was not present at that time.

There was a linear eruption on the inner aspect of the left upper extremity, which began about 3 inches (7.6 cm.) below the elbow, extended upward and in an almost continuous band, averaging half an inch (1.27 cm.) in width, to the axilla and across the left breast. Here it became discontinuous, until a similar linear process was found on the abdomen, where it did not cross the midline. The left lower extremity was most extensively involved. Here the eruption appeared

on the lateral and posterior aspects of the extremity and was more extensive and not so linear in distribution. The primary element was a small papule of indistinct color. The largest of these papules was about 0.75 mm. in diameter. The papules were most distinct over the upper extremities and the trunk. On the lower extremities they tended to be confluent and covered with a whitish desquamation. Biopsy was taken the morning of the meeting, and a frozen section preparation was available for examination. The white cells numbered 5,550 and the red cells, 5,240,000. The differential count showed: neutrophilic polymorphonuclears, 58 per cent; small lymphocytes, 36 per cent; large lymphocytes, 4 per cent, and eosinophils, 2 per cent.

DISCUSSION

DR. H. G. MISKJIAN: I doubt the diagnosis of lichen planus. I fail to find any elements characteristic of lichen planus, except perhaps on the anterior border. We might take a biopsy from that area. The lesions on the thigh do not look like lichen planus. Since the condition is acquired, it cannot be a nevus.

DR. J. EDGAR FISHER: It can only be one of two conditions, nevus or lichen planus, and nevus is ruled out on account of the duration. One notices the typical shiny, violaceous papules of lichen planus; I should favor the diagnosis of linear lichen planus.

DR. C. G. LAROCCO: I favor the diagnosis of nevus linearis.

DR. H. N. COLE: I think this is an interesting case of linear lichen planus. It is an exceedingly rare condition. I do not think I have ever seen it before. Several cases have been reported as linear lichen planus when they were nevi. I questioned this little girl closely, and she said that one place on her arm had been there for five years, but I realize that we cannot depend on what a child of this age says. I do not think one would get such a sharply defined lichen planus on one side of the body. I hope we can have a report on this at the next meeting, after we have had a chance really to study the case.

DR. E. W. NETHERTON: I do not think that the duration would necessarily rule out nevi. I recall a case of nevus linearis that I saw two or three years ago in a boy and, very much to my surprise, in less than a month, it had spread over his heels to the buttocks. It came on a short time and did not respond to treatment. Duration does not rule out nevi.

DR. H. N. COLE: I have seen the same thing happen. The condition may appear later in life and suddenly.

DR. H. F. DEWOLF: We called this a "case for diagnosis," although I think that there is a good possibility that the condition is lichen planus. When we first saw this child, I thought the condition was an interesting case of linear nevus. The patient was in the hospital in January, and nothing of this nature was on the skin then. I think the histologic picture should decide whether this is a linear nevus or an unusual distribution of lichen planus. I looked up the literature, and Darier says that lichen planus may develop at this age, as well as any other dermatosis, and that it sometimes takes the peculiar distribution seen here. A biopsy specimen was taken this morning, and the frozen section is not so easy to study. I could not see much in favor of linear nevus.

A CASE FOR DIAGNOSIS. Presented by DR. H. N. COLE and DR. J. R. DRIVER.

R. M., a white man, aged 30, complained of sore throat. The family and personal history was essentially negative. There is no history of venereal disease. The patient was first seen in the middle of February, 1932. He gave a history that three months before he had had a sore mouth that lasted for two weeks, and in the last month the process had begun to come back. Except for the discomfort in swallowing, he feels perfectly well. At the time of the first visit the patient showed two sharply defined, punctate, grayish ulcers, the size of a large pea, on the soft palate, and distributed over the soft palate were a few

smaller ulcers. There was a certain amount of erythema around these ulcers. There was no enlargement of the glands. The smears locally showed nothing to indicate diphtheria or thrush, and the dark-field was negative for Vincent's organisms. At the time of the first visit the examination of the skin gave negative results and general physical examination showed nothing. Serologic tests of the blood and the Wassermann, Kline and Hinton tests were negative.

The patient was seen on two succeeding visits, February 26 and March 3. The throat was much worse. He had some difficulty in swallowing. There was not much local edema. A white count was taken and there were 1,400 and 1,600 cells. The differential count showed: polymorphonuclears, 80 per cent; mononuclears, 17 per cent, and transitionals, 3 per cent. Smears taken once more from the local lesions were negative. The patient was then sent over to the City Hospital and numerous white blood counts were made varying from 3,200 to 5,900, the last one, about March 11, being 5,300. He was seen by the internist and others, who felt that he should be watched, but as there was a good percentage of leukocytes, these physicians were not especially worried. The patient has since had a few injections of a milk preparation. The last white count, made on March 23, was 6,700. A differential count on the same date showed: polymorphonuclears, 68 per cent; large mononuclears, 6 per cent; small mononuclears, 17 per cent; eosinophils, 5 per cent; transitionals, 1 per cent, and basophils, 3 per cent. He has had two injections of whole blood, each of 10 cc., given about four days apart.

DISCUSSION

DR. R. E. BARNEY: I think that the observations on the blood are interesting. When the condition started, it was apparently a distinct leukoplakia in the mouth. I saw this patient on two different occasions, at which times he presented lesions of this type. Now he has recurrent ulcers involving the buccal mucous membrane, also considerable fairly well developed periadenitis mucosa necrotica recurrens, as was called to our attention by Dr. Sutton. As you know, this is the mucous membrane analogy of granuloma papulonecroticum.

DR. E. W. NETHERTON: The patient has what I took to be a herpetic lesion on the palate. There were no lesions on the tongue or cheeks. I thought of a herpes stomatitis, suggesting a drug eruption due to phenobarbital or one of the barbital drugs.

DR. H. F. DEWOLF: How much smoking has played a rôle in this man's condition is hard to say. Once in a while we get a patient with a pharyngitis, perhaps not so marked as in this case. The patient gives a history of smoking heavily. I wonder if this should be considered.

DR. H. N. COLE: When we saw the patient in the office yesterday he had two large lesions, both the size of the one he presents today. There were ten or twelve others, and they have at all times been located over the soft palate. We gave him an intramuscular injection of whole blood four days ago and another yesterday. It seemed to help considerably. He had not smoked for several weeks. I do not think smoking has anything to do with it. Phenobarbital and similar drugs could cause this condition, but he has not taken any drug. When we first saw him we thought of the condition described by Dr. Sutton, periadenitis mucosa necrotica recurrens. After we had seen him twice and had taken a blood count, which was 1,600, we sent him to the hospital. We wonder if there is any relation to an aplastic anemia or to agranulocytosis? The high polymorphonuclear count is, of course, against the latter disease.

Book Reviews

Dermatology and Syphilis. Edited by Dr. Fred Wise and Dr. Marion B. Sulzberger. **Urology.** Edited by Dr. John H. Cunningham. Practical Medical Series. Price, $2.25. Pp. 458. Chicago: The Year Book Publishers, Inc., 1931.

This well known year book in dermatology is under the new editorship of Dr. Wise and Dr. Sulzberger. The publishers may be congratulated at once on their choice of editors, for a better choice could not have been made. This volume sustains, if it does not advance, the standard of the series as a summary of dermatology. The editors have adopted as their standard in selecting material, first, that it shall appeal to the general practitioner through its special attention to practical and therapeutic subjects, and second, that it shall include the less accessible contributions to dermatology. They have gone through the literature carefully from this standpoint, and give an admirable summary of the important practical and scientific contributions to diseases of the skin and syphilis in the last year. The book, as usual, is a summary of great value to all who are interested in dermatology. In "Urology," Dr. Cunningham gives his expected interesting review of the subject, and dermatologists will find in this many things that will interest them. The price at which this book is sold is extraordinary in comparison with that of the usual medical book. It would be a great advance if more medical books were priced like this series. The publishers are doing an actual service to medicine in distributing these volumes at such a low price. The high cost of most medical books is actually a restraint on general medical progress.

News and Comment

SECTION ON DERMATOLOGY AND SYPHILOLOGY

Applicants for a place on the program of the Section on Dermatology and Syphilology of the American Medical Association, which meets in Milwaukee, June 12 to 16, 1933, are urged to communicate with the secretary promptly. Presentations will be limited to Fellows of the Association and invited guests. A tentative program is being arranged at this time, and the final program must be submitted to the Association on or about Jan. 1, 1933.

H. R. Foerster, M.D., *Secretary*,
208 East Wisconsin Avenue, Milwaukee.

Directory of Dermatologic Societies *

FOREIGN

British Association of Dermatology and Syphilology (Canadian Branch)

J. Frederick Burgess, President, Drummond Medical Bldg., Montreal.
B. Usher, Secretary-Treasurer, Medical Arts Bldg., Sherbrooke St., W., Montreal.

Royal Society of Medicine, Section of Dermatology

A. M. H. Gray, President, 30 New Cavendish St., W. 1, London.
H. Thompson Barron, Secretary, 53 Queen Anne St., W. 1, London.

NATIONAL DERMATOLOGIC SOCIETIES

American Medical Association, Scientific Assembly, Section on Dermatology and Syphilology

Francis Eugene Senear, Chairman, 55 E. Washington St., Chicago.
Harry R. Foerster, Secretary, 208 E. Wisconsin Ave., Milwaukee.
Place: Milwaukee. Time: June 12-16, 1933.

American Dermatological Association

Fred Wise, President, 200 W. 59th St., New York.
W. H. Guy, Secretary, 500 Penn Ave., Pittsburgh.
Place: Chicago. Time: 1933.

SECTIONAL DERMATOLOGIC SOCIETIES

Baltimore-Washington Dermatological Society

Lee McCarthy, President, 1835 Eye St. N. W., Washington, D. C.
M. H. Goodman, Secretary, 401 Medical Arts Bldg., Baltimore.

Central States Dermatological Association

Emmett C. Troxell, President, 74 W. Adams St., Detroit.
William G. Saunders, Secretary, 9203 Grand River Ave., Detroit.
Place: Detroit. Time: December 3, 1932.

Iowa and Western Illinois Dermatological Association

J. C. Kessler, President, University Hospital, Iowa City, Iowa.
Robert E. Jameson, Secretary, 201 West Second St., Davenport, Iowa.

New England Dermatological Society

Arthur M. Greenwood, President, 416 Marlboro St., Boston.
William P. Boardman, Secretary, 388 Marlboro St., Boston.

Southern Medical Association, Section on Dermatology

Emmet R. Hall, Chairman, 1001 Exchange Bldg., Memphis, Tenn.
Dudley C. Smith, Secretary, University, Va.
Place: Birmingham, Ala. Time: November 16-18, 1932.

* Secretaries of dermatologic societies are requested to furnish the information necessary for the editor to make this list complete and to keep it up to date.

STATE DERMATOLOGIC SOCIETIES

Florida Society of Dermatology and Syphilology

Chairman for each meeting is elected from city in which meeting is held.
Frank Wilson, Secretary, 310 Greenleaf & Crosby Bldg., Jacksonville, Fla.
Place: Jacksonville, Tampa, Miami and place of meeting of state medical society.
Time: Quarterly.

Louisiana Dermatological Society

J. A. Devron, President, 150 Baronne St., New Orleans.
M. T. Van Studdiford, Secretary-Treasurer, 912 Pere Marquette Bldg., New Orleans.

Medical Society of the State of New York, Section on Dermatology and Syphilology

Paul E. Bechet, Chairman, 55 Park Ave., New York.
Herbert H. Baukus, Secretary, 925 Delaware Ave., Buffalo.

Medical Society of the State of Pennsylvania Section on Dermatology

Edward F. Corson, President, Medical Arts Bldg., Philadelphia.
Stanley Crawford, Secretary, 200, 9th St., Pittsburgh.

Michigan State Medical Society, Section on Dermatology and Syphilology

Cyril K. Valade, Chairman, 1604 Eaton Tower, Detroit.
George H. Belote, Secretary, University Hospital, Ann Arbor.

Minnesota Dermatological Society

H. N. Klein, President, 350 St. Peter St., St. Paul.
D. D. Turnacliff, Secretary, 407 Medical Arts Bldg., Minneapolis.

Oklahoma Dermatological Association

William E. Eastland, President, 117 N. Broadway, Oklahoma City.
C. L. Brundage, Secretary, 616 Medical Arts Bldg., Oklahoma City.

Texas Dermatological Society

T. J. Calhoun, President, 1719 Pacific Ave., Dallas.
Everett R. Seale, Secretary, 1215 Walker Ave., Houston.

LOCAL DERMATOLOGIC SOCIETIES

Atlanta Dermatological Society

Francis G. Jones, President, 384 Peachtree St., Atlanta, Ga.
Charles A. Wilkins, Secretary, Medical Arts Bldg., Atlanta, Ga.

Bronx Dermatological Society

Adolph Rostenberg, Chairman, 152 E. 179th St., New York.
Theodore Rosenthal, Secretary-Treasurer, 115 W. 86th St., New York.

Brooklyn Dermatological Society

B. B. Berkowitz, President, 225 Eastern Parkway, Brooklyn.
A. M. Persky, Secretary, 1750 Ocean Pkwy., Brooklyn.

Buffalo Dermatological Society

Herbert H. Bauckus, Presidennt, 925 Delaware Ave., Buffalo.
William F. Hoover, Secretary, 333 Linwood Ave., Buffalo.

Chicago Dermatological Society

Michael Ebert, President, 25 E. Washington St., Chicago.
E. A. Oliver, Secretary, 55 E. Washington St., Chicago.

Cincinnati Dermatological Society

Ralph R. DuCasse, President, Carew Tower, Cincinnati.
Raymond G. Senour, Secretary-Treasurer, 19 W. 7th St., Cincinnati.

Cleveland Dermatological Society

E. W. Netherton, President, Cleveland Clinic, Euclid Ave. and E. 93d St., Cleveland.
H. G. Miskjian, Secretary, Rose Bldg., Cleveland.

Detroit Dermatological Society

Emmett C. Troxell, President, 74 W. Adams Ave., Detroit.
William G. Saunders, Secretary-Treasurer, 9203 Grand River Ave., Detroit.

Los Angeles Dermatological Society

Samuel Ayres, Jr., Chairman, 2007 Wilshire Blvd., Los Angeles.
Louis F. X. Wilhelm, Secretary, 1401 South Hope St., Los Angeles.

Manhattan Dermatologic Society

Fred Wise, Chairman, 200 West Fifty-Ninth St., New York.
Mihran B. Parounagian, Secretary, 126 E. 39th St., New York.

Montreal Dermatological Society

J. F. Burgess, President, Drummond Medical Bldg., Montreal, Canada.
B. Usher, Secretary-Treasurer, Medical Arts Bldg., Sherbrooke St., W., Montreal, Canada.

New York Academy of Medicine, Section of Dermatology and Syphilis

A. Benson Cannon, Chairman, 371 Park Ave., New York.
Louis Chargin, Secretary, 1 W. 85th St., New York.

New York Dermatological Society

George M. MacKee, President, 200 W. 59th St., New York.
Edward R. Maloney, Secretary, 853 7th Ave., New York.

Omaha Dermatological Society

H. C. Sumney, Chairman, 1011 W. O. W. Bldg., Omaha.
Donald J. Wilson, Secretary, 1216 Medical Arts Bldg., Omaha.

Philadelphia Dermatological Society

Jacob M. Schildkraut, Chairman, 170 W. State St., Trenton, N. J.
Jacques P. Guequierre, Secretary, 1930 Chestnut St., Philadelphia.

Pittsburgh Dermatological Society

Claude B. Norris, Chairman, 244 Lincoln Ave., Youngstown, Ohio.
Frederick Amshel, Secretary, 3401 5th Ave., Pittsburgh.
Place: Pittsburgh. Time: October, 1932.

St. Louis Dermatological Society

Richard S. Weiss, President, 3720 Washington Blvd., St. Louis.
M. F. Engman, Jr., Secretary-Treasurer, 3720 Washington Blvd., St. Louis.

San Francisco Dermatological Society

Charles Schoff, President, 1127, 11th St., Sacramento, Calif.
John M. Graves, Secretary, 909 Hyde St., San Francisco.